

THE POLITICS OF WATER

Israeli-Palestinian Transboundary Resource Management and the Efficacy of Cooperation

by

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ABSTRACT

Israelis and Palestinians perceive water as a security factor and element of heritage. Relations reflect politicization of regional water issues because resources are scarce, jeopardized, and essential to human and ecological health and national sovereignty. This thesis assesses the status quo in joint management of transboundary water resources and interrogates the value of such cooperation. Allocation of supplies is problematic when political entities pursue unilateral actions despite international law and geographic contexts that force interdependency among neighbors positioned to divert, limit, and pollute water supplies. The water crisis deserves greater attention as constraints of an inflexible peace process and institutionalized asymmetric power structure impair socio-environmental welfare. As well, this thesis evaluates the dominant public discourse because it affects the governments' willingness to surmount the situation's many obstacles to redress water management. Contrast between deficits of current relations and identified solutions that challenge traditional approaches to joint management support this thesis' conclusion that a nuanced approach through improved communication and implementation of emergency measures ahead of permanent resolution to the political conflict can produce more sustainable win-win outcomes on water.

Keywords: aquifer, conflict resolution, desalination, Gaza Strip, Israel, Jordan River Basin, Oslo Accords, Palestinian Authority, transboundary joint water management, West Bank

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INTRODUCTION

WATER AND THE ISRAELI-PALESTINIAN CONFLICT

Repeated failures to end the complex and often volatile Israeli-Palestinian conflict inspire little hope for an expedient and just political resolution. With dismal lack of progress and exacerbation of mutual distrust between the parties, events of the region continue to captivate the international community. Major issues of contention that receive intense public attention such as borders, Jerusalem, refugees, and security take priority as the more emotionally and politically significant aspects to Israelis and Palestinians. Water is generally not the first or even fifth factor deliberated in regular discussions on the conflict. Yet its importance should not be overlooked in terms of either the issue's current and projected severity or its role in tempering Israeli-Palestinian relations.

Water permeates these issues as it is connected intrinsically to land and the population's health and prosperity. Transboundary resources deserve increased consideration and serious study in relation to the wider political conflict. Reform or replacement of the joint water management system is necessary to ensure viable resources for the sides. Action on water is challenging, but if Israelis and Palestinians cannot confront water how will the parties ever be able to address the more salient issues of the conflict?

Strict adherence to a formula for peace created and endorsed by the Oslo Accords – a set of agreements signed by Israel and the Palestine Liberation Organization (PLO) in 1993 and 1995 where the parties recognized one another and agreed in vague terms to the premise of a two-state solution – obscures other possibilities that can lead to more concrete improvements. The 1993 Declaration of Principles (Oslo I) set a framework for resolution to the Israeli-

Palestinian conflict and was followed by the 1995 Interim Agreement on the West Bank and the Gaza Strip (Oslo II) that established Palestinian self-rule but not a state. The water system outlined in Oslo II did not guarantee treatment of water as a basic human right, and this feature of joint management is critical to understanding the concerns of the parties.

Despite disagreements over political claims to shared sources, water is one area on which consistent cooperation has been not only possible but also able to survive external pressures of violence and discord. Whether that cooperation under Oslo equally benefits both communities is less evident because any form of agreement and dialogue is generally considered positive even as conflict has continued despite institutionalized coordination on water. Mechanisms for integrated project planning and execution require serious reevaluation regarding their effectiveness in equitably fulfilling the sides' separate and shared water needs. In many examples, the outcomes of joint management prove at best superficial cooperation, at worst detrimental to building trust and a functional groundwork necessary for a permanent peace.

Oslo failed Israel and the Palestinian Authority (PA) as neither security for Israel nor an independent Palestinian state have been realized in the two decades since the accord's signing. Replacement of the joint management system could benefit both parties on the wider conflict and in a more practical manner tackle various aspects of the water dispute. Actors should consider the risks of government behaviors against improvement possible under reformed and innovative visions for resource sharing that ensure equitable and reasonable access for both communities. Until the conclusion of final status negotiations Oslo will remain intact and perpetuate the imprecision and injustice on which it was founded and consequently intensified. Still, water has proven an important instrument for bringing the sides together. Addressing water before seriously attempting to solve the most famous and sensitive concerns of the Israeli-Palestinian

conflict is an unchartered but potentially more achievable negotiating track that strays from the traditional peace process established by Oslo.

Fear of water causing wars based on limited, divertible, compromised resources is one impetus for pursuing constructive action on shared water ahead of a permanent political resolution. However, that concern proves unfounded and based in false assumptions about interstate water relations. Israel and the PA can rather view water talks as a confidence-building measure, and transitively as a conduit to peace. Although far from a cure-all to entrenched sensitive issues of the conflict, in other cases of similar resource disputes directly addressing water through sustainable bilateral agreements has demonstrated real cooperation on water encourages and builds foundations for more peaceful relations overall. Thus, reaching a new settlement on water holds possibilities for motivating broader Israeli-Palestinian peace, but this potential byproduct of cooperation can only occur if the water issue is pursued in an untraditional timeline before the conclusion of final status negotiations.

This thesis explores current water relations based on historical and institutional components of joint management. Through this understanding it attempts to chart a path forward from a stagnant and unworkable status quo. Chapter One covers the history of joint water management between Israelis and Palestinians since the signing of Oslo II, and establishes the major challenges to clean reliable access in the region. Chapter Two examines obstacles to effective water cooperation within the public discourse in Israel, the PA, and internationally, and illuminates the positions of the relevant actors. Chapter Three applies lessons from external cases of transboundary water management to make recommendations on the water system through identifying features for improved cooperation necessary in a model agreement that is prudent, practical, and consistent with customary international water law.

This overview of the current dispute does not attempt to offer a detailed plan of action on shared water. It rather explains the complex political dilemmas behind these flawed water relations and recommends select types of mechanisms for productive cooperation practical within the confines of the interim transitional period and for future final status negotiations. This course is advocated because the dominant political will mandates a continuation of the Oslo framework until the conclusion of peace talks, but an ideal scenario for progress on the issue would involve replacement of the interim system. The primary task of this assessment is to propose practical measures that will target the most urgent failings of the Oslo water regime to improve the functioning of joint management for both communities while enabling future renegotiation of the entire system. With consideration for existing infrastructure, public opinion, and the norms and goals of the Israeli-Palestinian peace process changes to water relations are both possible and absolutely beneficial to all parties of the conflict.

CHAPTER ONE

THE OPERATIVE STATUS QUO

This chapter outlines political provisions for cooperation currently in effect in the Israeli-Palestinian water dispute and provides examples of both where and how water management is integrated and deliberately disjointed. To explore the conflict and the region's water conditions fully both the institutionalized joint management system in the West Bank and the separated situation in the Gaza Strip are presented, and it is established that the communities in both territories and Israel are made interdependent by transboundary resources. Geography and basic international water law contextualize Israeli-Palestinian shared water conditions evaluated in the post-Oslo II period. The assessment, based on data from the existing system and opinions of water policy experts, considers current socio-environmental conditions in the PA as well as Israeli environmental security priorities.

The Oslo regime committed the parties to collaborative action on water, but the asymmetry that defines relations prevents successful coordination of Israeli-Palestinian behaviors. Vital elements lacking in the system – such as reciprocal monitoring of relevant actions on shared water, other mechanisms for consultation that reduce uncertainties about those resources, and guarantees for compliance on commitments – only increase mutual mistrust and obstruct true progress on the dispute in the interim. The crafters of Oslo designed the Joint Water Committee (JWC) with the intent for it to be replaced by an enduring institution following achievement of permanent political resolution within five years of its 1996 formation. Yet it continues to operate in manner that does not increase the likelihood of peace despite superficial appearances of cooperation. The reality of this transitional peace process-endorsed system

translates into irresponsible utilization and endangerment of shared water, whereas sustainable and just management is possible and essential.

Geographic Background

Under international water law, Israel and the PA are co-riparians. This means that by their territorial bordering or inclusion of a water source, they possess legal claims to equitable shares of its supplies. Each suffers from chronic shortages for which they must vigilantly prepare with flexible water management measures.¹ Water encourages interdependency despite the instinctual desire of states to pursue their own rational self-interests, and thus nature incentivizes bilateral action on transboundary sources.

The 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Water stipulated shared water should be used in an equitable and reasonable manner with attention to sustainable exploitation and the interests of the parties.² This international water law also mandates that states should avoid causing significant harm to co-riparians. Israel did not consent to this convention, yet its neighbors Jordan, Lebanon, and Syria are signatories³. Although weak and largely unenforced,⁴ the UN Convention has entered into force and its framework supports Israeli and Palestinian positions concerning recognition of rights and divisions of multiple shared surface and groundwater sources. As the concept of access to safe freshwater gains validity and acceptance as a human right, states should recognize that the right to water derives from the indivisible right to life.

¹ I. Fischhendler & D. Katz. (2013). The Impact of Uncertainties on Cooperation over Transboundary Water: The Case of Israeli-Palestinian Negotiations. *Science Direct*, 50, 204.

² United Nations General Assembly. (1997). *Convention on the Law of the Non-navigational Uses of International Watercourses*. New York, NY, Article 5.

³ R. Aviram & D. F. Shmueli. (2013). The International Hydro-Political Politics of Israel. *Global Issues in Water Policy*, 4, 248.

⁴ E. Weinthal, A. Vengosh., A. Marei, A., Gutierrez, W. & Kloppmann. (2005). The Water Crisis in the Gaza Strip: Prospects for Resolution.” *Ground Water*, 43.5, 656.

Water is the most basic element for civilization as it is vital to human health, environmental security, and socioeconomic functioning. Although international water law is currently weak, it merits serious adherence by governments especially in the context of transboundary resources. The 1966 Helsinki Rules on the Uses of the Waters of International Rivers, to which Israel is a signatory,⁵ is an unenforced but significant contributor to customary international water law. To revise and expand the scope of Helsinki the Water Resources Committee of the International Law Association, on which an Israeli representative has served, drafted the 2004 Berlin Rules on Water Resources as a guideline to transboundary water use.⁶ Despite the fact that Helsinki and Oslo predate the UN Convention's similar calls for equitable and reasonable utilization⁷ and Israel has been supportive of this concept in the past, Israel does not fully recognize Palestinian riparian rights and seeks to maintain its current levels of use and control over shared water. Behaviors of both political communities on shared resources violate international water law.

Disputes over land borders and areas subject to different grades of Israeli and Palestinian control complicate joint water management. What are commonly referred to as the pre-1967 borders distinguish Israel from territories captured in the 1967 Arab-Israeli War. The course and aftermath of the 1948 Arab-Israeli War delimited these boundaries. This war broke out upon the creation of Israel in May 1948, six months after the adoption of the 1947 UN Partition Plan to divide Palestine. At the end of the war, which Israelis see as their War of Independence, Israel and several Arab states signed separate ceasefire agreements in 1949 and the documents set the Armistice Demarcation Lines. Also known as the Green Line because it was originally drawn in

⁵ Aviram & Shmueli, 248.

⁶ International Law Association. (2004). *The Berlin Rules on Water Resources*. Fourth Report of the Berlin Conference on Water Resources Law. Berlin, Germany, Part One.

⁷ International Law Association. (1966, August). *The Helsinki Rules on the Uses of the Waters of International Rivers*. Report of the Committee on the Uses of the Waters of International Rivers, 1967. London, UK, Chapter 2.

green ink, it delimited armistice lines at the time but has since gained political and legal significance because Israel and most of its Arab neighbors have not made final peace treaties.

In an overwhelming victory in 1967 Israel expanded beyond its 1949 borders. Israel captured the Gaza Strip (which since 1949 had been held and administered but not claimed by Egypt), all of Egypt's Sinai Peninsula,

the West Bank (which since 1949 had been held and administered by Jordan and annexed in 1950), and the Golan Heights (a mountain range in southwestern Syria). Lands captured in this event are illustrated in Map 1.⁸

Only the Sinai Peninsula in a 1979 Egyptian-Israeli peace treaty and the Gaza Strip in a 2005 unilateral Israeli disengagement have been relinquished, and Jordan renounced its claim to the West Bank in 1988. As for the remaining land in question, Israel annexed East Jerusalem and the Golan Heights, and effectively occupies the West Bank. Since two-state peace proposals began to gain traction from the 1980s onward the West Bank and Gaza Strip have been generally regarded as the areas of a future Palestinian state; the 1993 Oslo I Accord set this premise as the working assumption of Palestinian negotiators but not necessarily all Israeli officials. This framework for peace has been revisited with Oslo II in 1995 and later failed attempts at resolution under United States mediation. Notable mediation events in the peace process include



⁸ 1967 Middle East War. (2007, June 4). Retrieved from *BBC News*.

the Camp David talks in 2000 that preceded the Second Intifada (Palestinian revolt against Israeli occupation resulting in intensified violence between 2000 and 2005), and most recently the 2014 negotiations whose collapse was shortly followed by a summer war between Israel and Hamas in Gaza. Several international calls for Israel to return the territories and end hostilities with its neighbors have been issued in a land for peace exchange. Territory is a central concern of the Israeli-Palestinian conflict, but violence and antagonism have been more common than cooperation. In this context land is a bargaining chip that is inextricably connected to international water.

Despite advocacy by the Palestinian and international communities and by left wing Israelis for Israel to return to its pre-1967 borders various Israeli administrations have constructed settlements exclusively for Jewish Israelis designated illegal under international law. Settlements in the West Bank comprised an estimated 6.8% of the territory in 2004,⁹ though Israeli-only transportation and communication networks that connect settlements to Israel as well as military zones and barriers to protect these settlements make their impact much larger than that percentage. In 2005 Israel unilaterally disengaged from Gaza, yet both it and the West Bank continue to be subject to heavy Israeli control – imposed externally on Gaza by blockade, and codified by Oslo internally in the West Bank. In different manners but in both cases many consider these conditions an occupation. Certain Israelis do not believe this situation to be an occupation, but the status quo between the Israeli and Palestinian sides is at best a substantially asymmetrical power relationship. These territorial divisions and geographic location of sources in the region are vital to understanding the water dispute.

⁹ M. Zeitoun. (2007). The Conflict vs. Cooperation Paradox: Fighting Over or Sharing of Palestinian-Israeli Groundwater? *Water International*, 32.1, 112.

Given the overtly hostile political environment in which these governments operate, it is an added complication that Jordan, Lebanon, and Syria join Israel and the PA as riparian states to the Jordan River Basin. No river basin organization governs relations among them, which is a reflection of the fact that there are no diplomatic relations between Israel and these political entities except for Jordan and the PA. The Upper Jordan River stems from the Hasbani River (originates in Lebanon), the Baniyas River (originates in the Golan Heights), and the Dan River (originates in Israel). Israel gained control of the Baniyas headwater in the Golan Heights located within territory captured from Syria in 1967, and has since controlled two of the three upstream sources of the Jordan River.¹⁰

Although all Jordan River riparian states¹¹ are guilty of diversion activities, this unprecedented water access has enabled Israel to divert supplies while its neighbors face severe shortages. Against arid conditions, population growth, and climate change Israel has withstood environmental adversity through developments in water technologies, although further action is necessary to preserve the health of its vulnerable sources. Israel heavily utilizes and leads the world in desalination,¹² which refers to an expensive energy-intensive process that removes salt from water. It also employs drip irrigation that uses slow-dripping pipes to save water in the agriculture sector. Trends indicate that of the Jordan River Basin's five riparian entities, Israel will continue to be the most secure in terms of water over the next decade, even though the situation will deteriorate by varying degrees for all if the present water situation persists.¹³

¹⁰ E. Feitelson & I. Fischhendler. (2009). Spaces of Water Governance: The Case of Israel and Its Neighbors. *Annals of the Association of American Geographers*, 99.4, 735.

¹¹ For the purposes of this thesis, the PA is not defined as a riparian state, but rather a riparian political entity. In the case of the Jordan River, Israel has blocked Palestinian access since 1967 and thus the PA has been unable to contribute to diversion activities.

¹² Y. Garb. (2008, April). *Desalination in Israel: Status, Prospects, and Contexts*. Address at the Water Wisdom Conference, Amman, Jordan, 1.

¹³ P. Kirshen & J. Lautze. (2005). Water Allocation, Climate Change, and Sustainable Water Use in Israel/Palestine: The Palestinian Position. *Water International*, 34.2, 199.

The Jordan River Basin includes the Sea of Galilee (also called Lake Tiberias or Kinneret) disputed between Israel and Syria, and other major cross-border streams. Israel, Jordan, and the PA are also riparians to the Dead Sea, into which the Jordan River discharges. Extreme diversion of the Jordan River by all riparian states has threatened the Dead Sea, the lowest point on earth, whose water level has dramatically declined in recent years. The Dead Sea's salinity is among the highest of bodies of water in the world, and its shrinking threatens local ecology by lowering water tables, causing the drying up of surrounding land.

In 1994 Israel and Jordan reached a resolution over the Jordan River as part of a comprehensive peace treaty, which in terms of transboundary resources only referenced portions of the Jordan River watershed. This document disregarded Palestinian riparian claims by effectively considering jurisdiction of the West Bank under Israeli control and irrelevant to this separate bilateral agreement.¹⁴ The peace treaty and subsequent joint Israeli-Jordanian actions and water projects do not recognize Palestinian access to the river;¹⁵ any Israeli-Palestinian agreement would necessitate changes to Israeli-Jordanian water relations because it would alter divisions within the basin.¹⁶

As part of this treaty Israel agreed to store Jordanian water in the Sea of Galilee seasonally in exchange for transfers of supplies from the Lower Jordan's major tributary, the Yarmouk River on the Jordanian-Syrian border.¹⁷ Israel also diverts water from the Galilee, which decreases flow to the Jordan River and the extremely vulnerable Dead Sea, to supply its population and agricultural activities in the southern Negev desert via a national water pipeline.¹⁸

¹⁴ D.B. Brooks & J. Trottier. (2012). *An Agreement to Share Water between Israelis and Palestinians: The FoEME Proposal*. EcoPeace/Friends of the Earth Middle East, 14.

¹⁵ *Ibid*, 37.

¹⁶ Aviram & Shmueli, 262.

¹⁷ Feitelson & Fischhendler, 736.

¹⁸ P. Kirshen, J. Lautze, M. Reeves, & R. Vega. (2005). Water Allocation, Climate Change, and Sustainable Peace: The Israeli Proposal. *Water International*, 30.2, 191.

The 1994 Israeli-Jordanian agreement demonstrates treaty resiliency possible through relatively friendly relations, in contrast to the Oslo water system that is widely considered a failure requiring total overhaul and undermined by episodes of violence. While the Jordanian arrangement is not optimal in terms of upholding the values of the UN Convention and Helsinki, it is superior to the continuation of hostilities, occupation, and intentional diversion of shared water prevalent in water relations among Israel, Lebanon, the PA, and Syria. In these cases, conflict on water is continuous but not always perceptible as damaging and opposing actions on shared resources occur even in the absence of violence.

Ineffective coordination significantly contributes to the Lower Jordan River's degradation from excessive diversion, sewage intrusion, salinization (damaging salt intrusion into freshwater resources, in this case caused by nearby saline springs), and agricultural runoff.¹⁹ As no river basin organization or other joint management structure exists between its five riparian entities, the Jordan River has suffered excessive diversion (98% of its original flow) and degradation as part of the larger basin system.²⁰ Water in the river is exceedingly poor in quality and unusable for human purposes. The Jordan River requires profound rehabilitation only possible with complete riparian management, a politically impossible feat at this time.

West of the Jordan River Basin the Mountain Aquifer is perhaps the most disputed transboundary Israeli-Palestinian source because Israel is technically its downstream user. Its basins underlie Israel and the West Bank, but only portions of the aquifer that lie within the territorial West Bank are subject to joint management. No reciprocal Israeli-Palestinian joint management exists over portions of the aquifer within Israel. The main rainfall intake areas of the Mountain Aquifer where groundwater is replenished are located within the West Bank, and

¹⁹ Brooks & Trottier, 35.

²⁰ Ibid.

the main discharge areas flow into Israel via cross-border streams. This aquifer is divided into three basins: the Western, Northern/Northeastern, and Eastern, with almost the entirety of the Eastern basin located within the West Bank.

The Coastal Aquifer underlies Israel and the Gaza Strip, which are also riparians to the adjacent Mediterranean Sea. Of all the shared Israeli-Palestinian sources the Coastal Aquifer suffers the greatest environmental degradation, the causes of which are explained later in this chapter. Approximately 75% of Israeli-Palestinian water supplies derive from the two main aquifers and the Jordan River Basin (specifically the Sea of Galilee).²¹ The other 25% of renewable water resources come from smaller basins, runoff, cisterns, desalination, and reused wastewater.²² Israel is advantaged both as the upstream user of the main shared sources and its relative economic strength which has enable it to develop alternative sources, whereas Palestinians do not have access to supplies outside of their enclosed territories. Map 2 identifies these main geographic features, indicates the direction of water flows from shared basins, and demonstrates where Israel and the PA are upstream or downstream users.²³

Environmental experts Erika Weinthal et al. have explained the significance of geography in water relations in terms of relative power: “The unique advantage of an upstream water user over a downstream water user limits the ability of states to cooperate over a shared water source because the benefits of cooperation are asymmetrical and unevenly distributed.”²⁴ Resources in the region are managed under Israeli-Palestinian coordination to varying degrees, particularly with consideration to where each party holds upstream control. In the West Bank, Israeli and Palestinian representatives govern water in select portions of the Mountain Aquifer

²¹ Kirshen et al., 198.

²² Ibid, 199.

²³ Zeitoun, 109.

²⁴ Weinthal et al., 653

Map 2: Transboundary Water Resources in Israel and the Palestinian Authority



but not the Jordan River to which Israel does not recognize Palestinian claims. There is also no policy and infrastructure coordination over the Coastal Aquifer. The transboundary water situation is unique because one party occupies the other, creating an imbalance in the joint management process over the Mountain Aquifer and limiting potential for mutually beneficial projects and equitable divisions of supplies.

Implementation of Israeli and Palestinian water plans differs territorially. Oslo II institutionalized cooperation on select development projects in the West Bank with the incomplete transfer of jurisdiction from Israel to the PA over that territory. In contrast, Israel in 2005 unilaterally disengaged from Gaza and placed it under blockade, without any mechanisms for coordination between the sides. These political factors understood together with the direction of water flows and physical location of recharge zones (where fresh surface water permeates basins, often used to support possession claims of groundwater sources) affect governance of water in the region.

Anatomy of the Joint Water Committee and Hydrological Issues in the West Bank

The establishment of the JWC effectively reassigned water management of the local Palestinian population to the Palestinian Water Authority (PWA), while Israel retained dominance over shared sources and policy implementation.²⁵ Integrated planning and maintenance was necessary and promised within the Oslo framework. However, the actual result was selective cooperation. As Oslo created fragmented areas of PA control, coordination on projects across the West Bank that treat it as a politically whole territory is impossible. Reciprocal cooperation also does not extend into Israel, as the JWC is geographically restricted to sources in the West Bank. Palestinian representatives have no power over areas of the Jordan

²⁵ Ibid, 656.

River Basin beyond the Mountain Aquifer, but Israeli representatives have full control over Palestinian resources. The JWC thereby demonstrates that simply the act of reaching political agreement does not remove the essential dilemmas of a dispute.²⁶ Institutionalized asymmetry limits the options of the weaker party and prevents productive cooperation.

At its moment of creation the JWC was intended as an interim institution to be replaced by a permanent apparatus for joint water management. However, failure to reach a final peace in the Israeli-Palestinian conflict through negotiation on issues deferred by Oslo has preserved the JWC and it remains the only system for Israeli-Palestinian water management almost two decades later.²⁷ The language of Oslo II stipulated deliveries to Palestinians in the West Bank based on estimated population needs within the prospective five-year interim period as 70 to 80 million cubic meters (MCM) of water per year. Oslo II also committed Israel to supply an additional five MCM of freshwater to Gaza per year.²⁸ These amounts do not reflect divisions that allow for equitable and reasonable utilization of all riparian parties and do not account for long-term changes to the water system.

Of the 26 joint committees established under Oslo, the JWC was one of the only two remaining organizations in operation by 2009.²⁹ Although the body remarkably met throughout the Second Intifada,³⁰ it has not convened since 2010 as Palestinian representatives have refused to call meetings that would grant approval to projects in Israeli settlements.³¹ Engagement on mutual water concerns was previously possible even in the context of widespread hostility and

²⁶ N. Mirumachi, J. Warner, & M. Zeitoun. (2010). Transboundary Water Interaction II: The Influence of “Soft Power.” *International Environmental Agreements: Politics, Law, and Economics*, 11.2, 15.

²⁷ Brooks & Trottier, 54.

²⁸ Israeli Ministry of Foreign Affairs. (1995). *The Israeli-Palestinian Interim Agreement*. Washington, D.C., Annex III, Article 40.

²⁹ The World Bank. (2009, April). *West Bank and Gaza - Assessment of Restrictions on Palestinian Water Sector Development*, (Report no. 47657-GZ), 8.

³⁰ J. Selby. (2013). Cooperation, Domination, and Colonisation: The Israeli-Palestinian Joint Water Committee. *Water Alternatives*, 6.1, 8.

³¹ A. Isaacroff. (2015, February 20). Waterless, the First Planned Palestinian City Sits Empty. *Times of Israel*.

violence, but in recent years water has transformed into a political instrument against Israeli occupation and settlement activity while environmental degradation persists.

Activities essential to community development and ecological safety are thereby compromised by the politicization of water. Failure to supplant the JWC reflects the state of the Israeli-Palestinian peace process on which its continued existence is dependent. Any reform to the water system in the current political context depends on conclusion of final status negotiations, mandated by norms of the peace process. In the absence of a permanent status agreement the existing power sharing structure favors developmentally advanced Israel by granting it control over Palestinian resources through its JWC position without any reciprocal Palestinian oversight within pre-1967 Israel or Israeli settlements in the West Bank. The Mountain Aquifer is the only transboundary source to which Israel is the downstream riparian but the JWC's limited scope effectively caters to Israeli water interests by supplanting its downstream disadvantage here for upstream control.

Throughout the period when the JWC did meet (1996-2010), its structure effectively coerced Palestinian members to approve Israeli settlement water projects. Implicit legitimization of what the PA perceives as illegal occupation in the West Bank³² contributed to the Palestinian decision to suspend its participation on the JWC. This phenomenon of automatic authorization for settlement plans occurred because while the administrative body requires Israeli and Palestinian consensus to sanction projects, there was an unwritten but observable rule in which Palestinian projects would not receive approval without first consenting to Israeli water proposals.

Israel can also develop water infrastructure in the West Bank unilaterally, whereas Palestinian plans require JWC approval to receive financing from international donors, and are

³² Selby, 7.

reliant on the ineffective Oslo system.³³ Suspension of the joint management regime has further inhibited Palestinian development of water projects in the West Bank. When the committee still convened in design and practice the Palestinian veto on the JWC only held power over Israeli inter-settlement projects (even though Israel had routinely failed to seek permission to improve and construct pipelines and wells).³⁴ Israel's water carrier Mekorot does not need to seek Palestinian approval for any developments and activities in areas of the Mountain Aquifer under Israeli control, and Mekorot maintains its control over areas of the West Bank into which it extended since 1967.³⁵ Such procedures reinforce imbalanced water relations in the West Bank.

These mechanisms, coupled with Israel's priority to preserve its security and relative strength within the unbalanced power relationship, weaken the Palestinian position. The result observed by environmental policy expert Mark Zeitoun is that

Less than one-quarter of the land within the Palestinian political boundary of the West Bank is subject to equal Palestinian-Israeli joint management, with the rest subject to an approval mechanism that would – and does – prioritize Israeli military objectives over Palestinian developmental or environmental objectives.³⁶

Reviewing the effects of its structure and decisions, it is evident that Oslo codified strong Israeli advantage through its maintenance of the asymmetric status quo. The water situation in the West Bank has worsened because prior to Oslo II Israel as the sole administrator was fully responsible for the local Palestinian population's water needs, but the system has transferred that obligation to the PWA whose powers are circumscribed geographically.

Zones of Israeli control in the West Bank outstrip areas of PA control. Oslo divided the

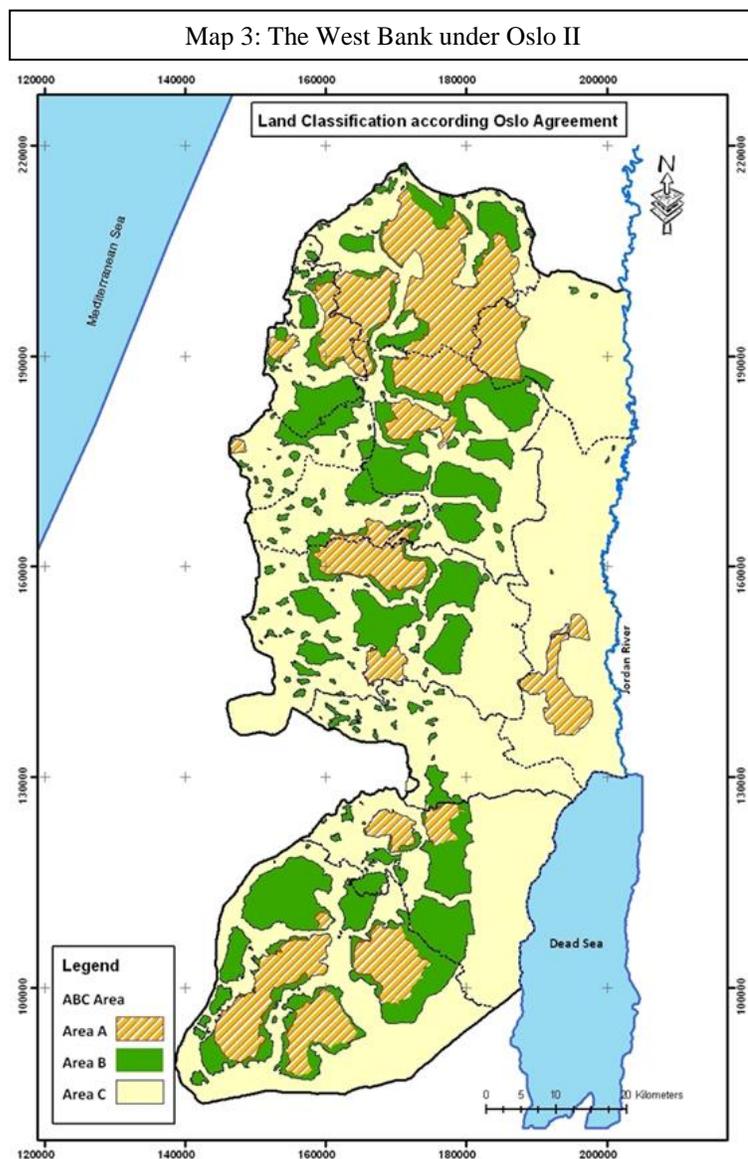
³³ Ibid, 9.

³⁴ Ibid, 17.

³⁵ Feitelson & Fischhendler, 735.

³⁶ Zeitoun, 112.

West Bank into uneven disjointed areas A, B, and C. Map 3 identifies these areas subject to different levels of Israeli and Palestinian control.³⁷ In Area A the PA assumed “powers and responsibilities for internal security and public order” meaning Palestinian self-rule.³⁸ Area B designated to the PA only “responsibility for public order for Palestinians.”³⁹ Area C constitutes the majority (60%) and remainder of West Bank territory, includes all Israeli settlements, and is under full Israeli control.⁴⁰ Israeli forces were to be redeployed in each area, and all areas were to be transferred to the PA gradually.⁴¹



Like movement of people, distribution of water between areas of Palestinian control is highly restricted under the Oslo framework. In Area C, PWA projects require both JWC and Israeli Civil Administration approval.⁴² Completion of these separate bureaucratic processes was

³⁷ Geo-Political Maps. (2010). Retrieved from Palestinian Hydrology Group for Water and Environmental Resources Development.

³⁸ Israeli Ministry of Foreign Affairs, Article XIII.

³⁹ Ibid.

⁴⁰ Ibid, Article XI.

⁴¹ Ibid, Article I.

⁴² Zeitoun, 112.

frequently prolonged over years, while plans of Israeli settlers submitted to the JWC were consistently approved at significantly higher rates and faster speeds. Approval for plans alone is not a guarantee that projects to protect the environment and local human population would be implemented. For example, of the 236 water projects approved by the committee between 1996 and 2008 only 36% were executed.⁴³

The JWC mandated each side enforce their separate water responsibilities in areas under their control, but this was difficult in the context of occupation. As Palestinian JWC representatives could not ensure measures like proper waste management were completed in Area C, inter-village infrastructure was difficult to plan and construct, and was ineffectual in the long-term if the goal of water cooperation under Oslo II was to help enable the functioning of a future more geographically contiguous Palestinian state. Since Palestinian suspension of its role on the JWC these issues remain unaddressed. The PA cannot rely on the Israeli Civil Administration to ensure adequate quantities and qualities of supplies reach Palestinians, especially in comparison with Israelis living in settlements. As Map 3 illustrates, there is systematic fragmentation of Palestinian areas that makes executing water projects across unintegrated territory unfeasible.

This status quo accelerates ecological deterioration alongside increased dependence on external supplies purchased from vendors and utilization of rooftop rainwater collection,⁴⁴ limits Palestinian sovereignty and state development in most of the West Bank, and is not true joint management. Environmental security expert Jan Selby described the situation as lacking

Policy coordination over the territory that needs it most, Gaza, or over the Jordan River, to which the Palestinians claim a rightful share. Conversely, there has been continuous

⁴³ Brooks & Trottier, 58.

⁴⁴ Weinthal et al., 657.

and truly Kafkaesque micro-coordination over West Bank water resources and supplies, reflecting Israel's interests in limiting Palestinian abstraction from the Mountain Aquifer and extending its territorial presence within the West Bank, whilst "subcontracting" responsibility for local water management.⁴⁵

The PWA is responsible for management of projects that serve its population in the West Bank. However, limits imposed by the Israeli Civil Administration in the West Bank caused the PWA to have effective control over only 7% of total extracted supplies in 2003.⁴⁶ Fulfilling Palestinian water duties is not thoroughly possible while Areas A, B, and C remain systematically isolated and controlled by Israeli Civil Administration.

Socio-Environmental Impact of the Joint Water Committee

By structuring the JWC with an equal number of Israeli and Palestinian representatives each holding effective veto power, the committee appeared in concept to be a platform to give both parties balanced voices on shared resources in the West Bank. In implementation of the Oslo II water system the Mountain Aquifer is governed by an agreement that not only essentially considers its supplies immobile and stable, similar to territory that can be divided into shares by riparian states,⁴⁷ but also institutionalized Israeli superiority. Basic for human and state functioning, water must be recognized as limited, divertible, and easily polluted to be managed properly and to protect its continued utility within a system that grants equal authority to the two sides.

The water dispute is particularly urgent because the JWC fails to address irreversible ecological effects, which otherwise could be attended to in an effective and less bureaucratic

⁴⁵ Selby, 18.

⁴⁶ Zeitoun, 113.

⁴⁷ Brooks & Trottier, 14.

body. Over-extraction and contamination of shared resources affects both populations within the West Bank and pre-1967 Israel. Current and historical usage of Israeli-Palestinian aquifers has surpassed sustainable yield of their groundwater. Projected population growth that will further rise in the event of the creation of an independent Palestinian state flooded with returning refugees will also complicate the water situation and allocation of equitable shares.⁴⁸ As strain on limited resources will intensify in the long-term, a temporary management committee is not equipped to address current and future shortages.

Furthermore, unsanctioned Israeli and Palestinian projects often exacerbate the compromised Mountain Aquifer by drilling wells too deep into its basins or too close together, causing greater susceptibility to pollution and increased salinity. Water in the basins is high quality, but because most of it is located hundreds of meters deep underground, abstraction is expensive and difficult.⁴⁹ The portions of the aquifer that are more accessible are also more vulnerable to pollution. This source recharges slowly and is already aggravated by over-extraction. As Palestinian projects are often stalled, many locals resort to drilling unlicensed wells that further strain the aquifer; their construction entirely circumvents the authority of the sole joint water body in existence between the PA and Israel, whose own tolerated drilling activities have also proven dangerous to the environment.⁵⁰

Sustainable extraction is also problematic because most of the Mountain Aquifer's productive zones for drilling are located in Area C.⁵¹ The laying of crude unapproved pipes by Palestinians to siphon water from exclusive Israeli settlement water lines (connected to other settlements and pre-1967 Israel that pump greater quantities and quality of supplies than what are

⁴⁸ Kirshen & Lautze, 192.

⁴⁹ Brooks & Trottier, 31-32.

⁵⁰ Ibid, 61.

⁵¹ Selby, 9.

delivered to Palestinian villages) compromises limited groundwater as it results in leakages.⁵² Local Palestinians consider these practices necessary to ensure sufficient access to water against technical limitations, but they increase mistrust between the parties by bypassing the regulations of the JWC. Both communities conduct unilateral actions that damage water relations but Israel's projects are implemented by its government whereas Palestinian actions generally have occurred beyond PA control by locals in Area C.⁵³ Until the sides address the structural imbalance of power and interests in the JWC the status quo of conflict in opposing actions on shared resources will persist.

Wastewater is another factor that worsens resource quality. Treatment plants are most needed in Area C where Palestinian plans for water facilities suffered the greatest delays.⁵⁴ Sewage seeping into the water supply is a major issue, as is cross-border pollution. Both Israelis and Palestinians create this untreated wastewater. A connection of streams coursing from Nablus, the second-largest city in the West Bank, into the Mediterranean Sea provides a critical example of socio-environmental negligence from lack of coordination. Untreated sewage and toxic industrial effluent flow into Israel, posing health hazards to communities and endangering local ecology.⁵⁵ Disagreements that delayed construction of treatment plants included concerns over who should pay and where the centers should be located. Thus, an effective solution to a local dilemma was deferred because of lack of trust among Israeli and Palestinian representatives. To compound this problem, these waterways flow through recharge zones of the Mountain Aquifer and thus the wastewater pollutes groundwater.⁵⁶ According to the Israeli Coordination of Government Activities in the Territories, the planned Nablus wastewater treatment plant was

⁵² Brooks & Trottier, 64.

⁵³ Selby, 19.

⁵⁴ Ibid, 9.

⁵⁵ Brooks & Trottier, 113.

⁵⁶ Ibid, 111.

finally completed in 2013 with financing from the German KfW Development Bank.⁵⁷ It had only received JWC approval in 2010 before the committee stopped meeting.

Although a solution was reached in Nablus after years of planning and dispute, this case of preventable environmental contamination is not an isolated incident and the construction of other treatment plants remains necessary. Both parties favored a proposed JWC solution to cross-border pollution to construct a wastewater treatment plant in the largest West Bank city, Hebron, which is divided into Palestinian and Jewish sectors controlled separately by Israel and the PA. Unfortunately, this plan like so many other joint Israeli-Palestinian endeavors was not implemented because the U.S. Agency for International Development (USAID), the proposed treatment center's sponsor, froze all water infrastructure projects in the West Bank amid violence of the Second Intifada. Israel instead unilaterally constructed a treatment plant within its pre-1967 borders and deducted its cost from the PA without treating the wastewater in the West Bank.⁵⁸ If the original center and others were to be constructed rather than allow severe contamination of shared resources to continue because of political tensions, treatment and reuse of wastewater for irrigation could prevent corruption of the region's basins and streams and simultaneously help offset shortages.

Trends indicate wastewater reuse will be necessary to help fulfill agricultural needs with increased water shortages in the next decade⁵⁹ and beyond, but no serious action has been taken to prepare for inevitable deficits. Palestinians have been accepting in principle but otherwise resistant⁶⁰ to follow Israeli suit and treat wastewater for irrigation. Despite lack of action thus far,

⁵⁷ U. Baumer. (2013, July 7). Construction of Nablus Waste Water Treatment Plant Completed. *Coordination of Government Activities in the Territories*.

⁵⁸ Brooks & Trottier, 105-107.

⁵⁹ Kirshen et al., 205.

⁶⁰ Palestinian representatives have completed courses on desalination and wastewater reuse through the Middle East Desalination Research Center and USAID, but more productive action is necessary to offset shortages, especially as

this project deserves implementation because it will help target two mutual problems: water pollution and projected shortages. Symbolically significant, joint action on contamination of shared resources would benefit and could increase trust among the parties, as “a cooperative project by definition infringes less upon international law ... and raises fewer sovereignty and security concerns.”⁶¹ JWC incompetence blocked a practical solution to problems of pollution and inadequate supplies whose result would be beneficial for Israelis and Palestinians on both sides of the pre-1967 borders.

Israel’s unilateral construction of limited treatment infrastructure, financed by deducting the costs from Palestinian taxes and custom duties it collects on behalf of the PA,⁶² does not improve the likelihood of peace. It rather exacerbates mistrust and does not aid Palestinians within the West Bank because those plants are located within Israel downstream from Mountain Aquifer recharge zones. Though provisions explicitly for the construction of shared infrastructure exist, only one treatment center has been built under JWC jurisdiction in the West Bank since Oslo II.⁶³ Solutions are possible within the framework of the JWC, but delays caused by political arguments, the cumbersome approval process, and Palestinian refusal to convene meetings since 2010 prevent their implementation, indicating endemic failures in the mechanisms of the joint management system.

Where proper measures for implementation and willingness for compromise are absent, ineffective unilateral solutions have inadequately addressed serious problems. The committee's procedures cannot prevent and solve circumstances detrimental to both sides, demonstrating the

the Palestinian position has shifted to a prioritization of riparian rights not wishing to cede claims to shared sources to fulfill domestic, industry, and agriculture needs.

⁶¹ I. Fischhendler, G. Cohen-Blankshtain, Y. Shuali, & M. Boykoff. (2013). Communicating Mega-Projects in the Face of Uncertainties: Israeli Mass Media Treatment of the Dead Sea Water Canal. *Public Understanding of Science*, 20, 12.

⁶² Brooks & Trottier, 103.

⁶³ Ibid, 58.

failure of the Oslo water regime. For example, half of the wastewater flowing through the Alexander Stream (which flows from the West Bank into Israel) percolates into the ground before treatment, contaminating the vulnerable basins of the Mountain Aquifer.⁶⁴ Both sides recognize the vital need for large-scale wastewater treatment, especially around industrial sites, but serious action has yet to occur. Israel's unilaterally constructed treatment plant within territory endogenous to Israel just across the Green Line⁶⁵ stems the spread of toxic contamination into Israeli water supplies but it is a temporary and incomplete solution that does nothing to improve water conditions in the West Bank or stave off contamination to the basins.

Israel is concerned about the effects of polluted waters flowing into its territory, as is the PA alarmed by pollution of the Mountain Aquifer and streams within the West Bank. Another main Palestinian priority is ensuring adequate quantity and quality of supplies reach its domestic, agricultural, and service sectors. Water deliveries for household use are insufficient as there are often discrepancies between supplies allotted and received, but limited distribution to industries also impedes the development of a strong self-supporting Palestinian economy.

Shortages and deliveries of inferior quality supplies are frequent in the West Bank, affecting all aspects of Palestinian life. According to the PWA, in 2010 about 85 MCM of water was to be supplied in the West Bank for domestic use, but only 60 MCM was delivered. Water allocated for Palestinian use was lost because of leakages in aging carrier infrastructure and by what the PWA considers "water theft" by Mekorot to redistribute quantities of supplies to Israelis beyond what was stipulated in Oslo.⁶⁶ Theoretically Israel provides Palestinians with quantities that exceed the interim agreement of 70 to 80 MCM per year, but in reality deliveries

⁶⁴ A. A. Rabbo & A. Tal. (2010). Introduction. In, *Water Wisdom: Preparing the Groundwork for Cooperative and Sustainable Water Management in the Middle East* (pp. 1-10). New Brunswick: Rutgers University Press, 6.

⁶⁵ Brooks & Trottier, 114.

⁶⁶ Brooks & Trottier, 56.

to Israelis have risen exponentially while water is lost en route to Palestinian villages. Increased resistance to the water regime is a result of Palestinian dissatisfaction with the perpetuation of the JWC and expansion of settlement activity.

The World Health Organization (WHO) recommends a daily supply of 100 liters of water per capita (l/c/d) for household use, but development issues unresolved by the JWC regularly cause Palestinians to receive well below that amount. Shortages are a reality that both sides recognize, but there are disagreements over the extent. Israel claims the PA receives enough annual water to supply its population with 170 l/c/d,⁶⁷ faults rapid population growth as contributing to any deficits, and notes that withdrawals from the basins have increased.⁶⁸ Yet water extracted and supplied remains insufficient to fulfill growing human needs.

According to the World Bank, Palestinians receive on average approximately 70 l/c/d of freshwater or fewer as the distribution network cannot reach all households.⁶⁹ In 2007 parts of Palestinian Hebron received the equivalent of just 10 to 15 l/c/d, with water delivered every forty days.⁷⁰ Israeli settlers in contrast are reliably provided with approximately four times the quantity of water than their Palestinian neighbors receive.⁷¹ Average domestic water use in Israel in 2010 was 275 l/c/d, whereas consumption was 73 l/c/d in Palestinian areas of the West Bank in that same year, and incalculable in Gaza as nearly 90% of municipal supplies were unfit for human use.⁷² Sufficient supplies are currently available, but the JWC has been unsuccessful in distributing equitable clean shares of water and current Israeli and Palestinian behavior will accelerate future shortages.

⁶⁷ Ibid, 56.

⁶⁸ Kirshen et al., 200.

⁶⁹ *West Bank and Gaza - Assessment of Restrictions on Palestinian Water Sector Development*, (Report no. 47657-GZ), 119.

⁷⁰ Ibid, 16.

⁷¹ Ibid, 4.

⁷² Brooks & Trottier, 24.

Palestinians primarily purchase water directly from Mekorot to attempt to fulfill basic water needs without defying the JWC mandate by illegally constructing wells and siphoning off existing lines that are subsequently destroyed by the Israeli Civil Administration. The Israeli national water carrier pumps supplies within the West Bank⁷³ abstracted from sources to which the PA is a riparian, and then sells them to the local population. Yet even where Palestinian villages are connected to existing pipelines under Mekorot's domain, households and businesses cannot rely on consistent clean running water deliveries because of frequent water shutoffs.

To compensate for ongoing shortages locals purchase expensive water tanks and use stored rooftop rainwater collection. These actions still do not provide Palestinians with the minimum quantities for consumption recommended by the WHO. Thus, the JWC is an emblem of a stagnant asymmetrical power relationship that increased Palestinian dependence on Israel and hindered economic development, despite its intended purpose within the Oslo framework to help lay the foundation for a Palestinian political entity that peacefully cooperates with Israel. Cooperation through the JWC has occurred amid continuous water conflict, and thus the system is an unambiguous failure.

Transboundary Water Issues in the Gaza Strip

Israel directly occupied the Gaza Strip from 1967 until 2005 when it unilaterally disengaged from that territory, but Israel still controls access in and out of the area and maintains a different type of occupation than in the West Bank. Gaza is technically part of the PA that for years has been isolated by Hamas rule (the elected Palestinian leadership in Gaza, which Israel does not recognize and considers a terror organization). However, no communication of cooperation over the shared Coastal Aquifer exists. This situation does not particularly concern

⁷³ Ibid, 57.

Israel as the upstream riparian. Israel can essentially determine quantity and affect quality of supplies that reach Palestinians in Gaza through its geographically advantaged position.⁷⁴

Regarding water shared with Gaza, in addition to committing Israel to supply at minimum five MCM yearly during the interim period Oslo II only stated: “The existing agreements and arrangements between the sides concerning water resources and water and sewage systems in the Gaza Strip shall remain unchanged.”⁷⁵ The accord maintained the 1967 status quo of water relations in Gaza to Israel’s advantage unaltered for more than four decades.

As in the West Bank, natural resources in Gaza suffer over-extraction. The Coastal Aquifer is less rechargeable than the Mountain Aquifer because of the area’s drier climate. Today 40% of its wells that operated in 1980 are no longer in use because of excessive pumping.⁷⁶ Among regions in the world Gaza is both the second most water-poor territory and one of the most densely populated areas, so there is extreme demand to increase access to potable sources amid rapidly increasing depletion and declining per capita availability.⁷⁷ In Gaza the situation is rapidly deteriorating into an irreparable crisis.

The Coastal Aquifer is extremely contaminated.⁷⁸ Worse than in the West Bank, its poor water quality is the product of seawater intrusion from the Mediterranean Sea and salinization from the land aggravated by over-pumping. Increased salinity is accompanied by insufficiently treated and untreated wastewater throughout Gaza that pollutes the aquifer and the sea, as Israel and Hamas have both dumped sewage, Hamas specifically because of a lack of electricity to operate treatment plants.⁷⁹

⁷⁴ Weinthal et al., 653.

⁷⁵ Israeli Ministry of Foreign Affairs, Annex III, Article 40.

⁷⁶ Brooks & Trottier, 32.

⁷⁷ Weinthal et al., 653.

⁷⁸ C. Messerschmid. (2011). *Water in Gaza: Problems and Prospects* (Working Paper Series - Conferences and Public Events Module). Forced Migration and Refugee Unit, Birzeit University, Birzeit, Palestinian Authority.1.

⁷⁹ Ibid, 5-7.

Throughout Israel's direct occupation of Gaza from 1967 to 2005 it supplied Israeli settlements with water pumped from the Coastal Aquifer. This action exacerbated the negative toll on the basin, which cannot replenish quickly enough while its water simultaneously is degraded.⁸⁰ By WHO standards in 2005 only 10% of water extracted in Gaza was suitable for human consumption.⁸¹ At current pumping rates and considering unacceptable basin conditions, very soon there could be no remaining potable water within the aquifer.

Most Gazan drinking wells should not be used but continue to supply Palestinians. Running water shortages are routine as most homes – often provisional substandard refugee housing – are not attached to pipelines.⁸² The majority of the population also depends on supplies purchased from unregulated private vendors who primarily sell desalinated water whose purity is contaminated during transport.⁸³ Water in Gaza is largely unfit for humans and agricultural crops; this ecological disaster significantly hinders local development and endangers the population's health as most locals continue to consume water from the aquifer because they lack alternatives.

The blockade and state of war between Hamas and Israel caused widespread destruction of already aging and degraded supply lines. Throughout violent conflict since Israel's 2005 disengagement from Gaza, Israel has specifically targeted wells, pipes, and other infrastructure,⁸⁴ and denies entry to deliveries of water as well as materials to reconstruct damage. Reliance on external sources is the only impactful alternative even as Israel routinely seals off Gaza and consequently access to freshwater supplies. During the most volatile clashes Palestinians rely heavily on unauthorized private sector suppliers and use filters for consumption from

⁸⁰ Weinthal et al., 654.

⁸¹ Ibid, 655.

⁸² Messerschmid, 10-11.

⁸³ Ibid, 11.

⁸⁴ Ibid, 9.

contaminated sources. When access is restricted to this extent people suffer from water-borne illness⁸⁵ because they must drink, cook, and shower despite extremely poor conditions.

Plans to construct desalination plants have been proposed by multiple parties to directly service Gaza,⁸⁶ and to possibly service Israel and the West Bank in the event of a final peace resolution.⁸⁷ At present, such projects – which could use brackish water or convert seawater from the Mediterranean Sea – are unfeasible politically and financially. Although these plans could help mitigate the water crisis, desalination can only supplement available natural resources because it is not a panacea to fulfilling human consumption needs;⁸⁸ nor does it guarantee recognition of Palestinian water rights.

Basic principles of peaceful transboundary cooperation are not possible today in Gaza. Significant harm, inequitable and unreasonable use, absence of prior notification on projects, and no negotiation over shared sources are all features of the Israeli-Palestinian water relationship on the Coastal Aquifer, making sustainable management impossible at this time.⁸⁹ As long as Israel does not recognize the leadership in Gaza or until a different more palatable party gains control coordination over water is improbable. This situation is a direct contrast to the West Bank, where recognition of Palestinian government is essential within the joint management system. Only institutionalized redistribution via water transfers from Israel's purer upstream hold of the Coastal Aquifer or increased international aid (provided via desalination at the conclusion of a final peace resolution or prior to this event) can meaningfully address problems of decreased quality and quantity in the dire short-term, but this requires a political solution amid the severe political context.

⁸⁵ Ibid, 13.

⁸⁶ Brooks & Trottier, 124.

⁸⁷ Kirshen et al., 201.

⁸⁸ Messerschmid, 23.

⁸⁹ Weinthal et al., 656.

Consequences of the Oslo Water Regime

The durability of the JWC, which was intended to be a temporary institution, is a testament to the obstacles of the larger peace process and the ineffectiveness of asymmetry codified by Oslo. As the status quo advantages Israel, despite evidence that reforming the water system will benefit both parties it is unlikely that major changes in the West Bank or Gaza will be implemented in time to ensure sustainable utilization in the coming decades. Untenable and inequitable practices endanger both communities socially and environmentally, but politics ultimately dictates any changes to the water system. However, reforms that reduce the negative effects of problematic historical use are possible within the current situation. Political will to alter the course of water relations is difficult to achieve. Yet determination to address chronic shortages and increasing pollution must come from both governments in full understanding of the consequences of inaction. Any negotiations on water must produce a more enforceable agreement even if it will only entail limited progress.

Publicity of the issue and willingness to remold expectations of when a revisal to the water regime may take place are imperative if significant projects to improve conditions throughout the region are to occur. There must be public demand from within the two communities in addition to international pressure so that the perceived political cost of pursuing settlement of the water issue before the conclusion of final status negotiations becomes less than the risks of inaction. This course is unprecedentedly necessary to address immediate water challenges unresolved and aggravated under the interim arrangement. Water as an element of the Israeli-Palestinian conflict will be easier to resolve than the core issues because it is traditionally less salient and there is precedence for cooperation. For example, Israeli and Palestinian heads of

the JWC, Noah Kinary and Nabil El-Sherif, advocated cooperation on mutual water issues at the outbreak of the Second Intifada:

The two sides wish to bring to public attention that the Palestinian and Israeli water and wastewater infrastructure is mostly intertwined and serves both populations ... we need the cooperation and support of all the population, both Israeli and Palestinian.⁹⁰

The endemic and mutual problems of the water system cannot be addressed without effective Israeli and Palestinian cooperation. As such, conflict resolution within the water dispute requires increased awareness and support for water rights and human and environmental health, with a thorough understanding of the sides' positions today to identify room for compromise on an issue that significantly affects both communities.

⁹⁰ International Water Law Project. (2001, January 31). *Israel-Palestinian Joint Water Committee: Joint Declaration for Keeping the Water Infrastructure out of the Cycle of Violence*. Erez Crossing, Gaza Strip: N. Kinary & N. El-Sherif.

CHAPTER TWO

OFFICIAL POSITIONS AND PUBLIC ATTITUDES SINCE OSLO

Water is vital to the health and functioning of individuals, states, and international systems. Yet traditionally it has not been regarded as among the chief concerns of the Israeli-Palestinian conflict. Since Oslo increased media and other non-state actor attention as well as official responses have contributed to politicization of transboundary water. Intensifying intransigence toward confronting the region's water situation is fostered by a climate in which productive cooperation has generally be unable to survive, while multilayered national and nongovernmental interests attempt to influence political and ideological discussion on the dispute.

Enhanced focus on this aspect of the conflict can encourage action on deteriorating environmental issues and give impetus to political negotiations. The alternative is ecological catastrophe throughout the region as indicated by the outcomes of negative Israeli and Palestinian actions on water in Gaza. Within the formal course of the peace process and under guidance of relevant organizations, the result of heightened rhetoric and false examples of cooperation serves to undermine the facts of the water issue and possibilities for progress. In this regard, geography expert Naho Mirumachi and Zeitoun discuss the heavy influence politics exerts on transboundary resource management: "Obstacles to collective action over environmental issues ... are primarily social," often derived from nationalism and state interests.⁹¹ In other words, international relations determine the water agenda,⁹² not socio-environmental priorities. Water dilemmas require greater public awareness as well as

⁹¹ N. Mirumachi & M. Zeitoun. (2008). Transboundary Water Interaction I: Reconsidering Conflict and Cooperation. *International Environmental Agreements: Politics, Law, and Economics*, 8.4, 301.

⁹² Aviram & Shmueli, 261.

concentration on the reality of conditions and prospects faced by both communities to emphasize the benefits of cooperation over unilateral imbalanced action.

Demands for recognition of rights and fulfillment of shared responsibilities have evolved. Policies Israelis and Palestinians seek in potential negotiations today differ from objectives expressed twenty years ago. This chapter primarily covers recent events and debates around the water dispute in the interim period through the spring of 2014 and discusses the course of public understanding beyond this time as the situation is developing and far from resolution. Examples of issues politicized or that garner public attention include suggestions for fixed quantity redistribution versus acknowledgement of rights to equitable and reasonable access, approval processes for projects in the West Bank, and most recently responses to the proposed Red Sea to Dead Sea conduit among Israel, Jordan, and the PA.

Conflict resolution is premised on perceptions and willingness to act bilaterally where unilateral action may appear more appealing to one or both parties. The interdependency created by the existence and importance of international water must be leveraged for peace rather than disregarded amid worsening conditions. Furthermore, analysis of the psychology of relevant actors on Israeli-Palestinian water and increasing polarization on the issue is necessary to understand prospects for settlement. Negotiations are possible only to the extent that the sides comprehend the abject reality of the water situation and can therefore be motivated to act on mutual socio-environmental challenges.

Official Israeli and Palestinian Positions

Israel and the PLO negotiated the water section of Oslo II within the context of attempting to reach a comprehensive agreement to the wider political conflict. Pressure to

achieve a comprehensive peace by the parties and international community prevented the creation and implementation of practical mechanisms that would ensure just divisions of supplies and environmental protection. Considered together with recurrent episodes of violence and general instability throughout the two decades since Oslo, changes in the sides' positions on water are to be expected. Oslo failed to meet the needs of Israel and the PA across the core issues of the conflict, even with the inclusion of notable concessions that deferred settlement of water issues. Compromises on joint resource management from the 1990s therefore are insufficient and ineffective to addressing Israeli and Palestinian needs and goals in consideration of present circumstances.

The main historical disputes on shared water are specific obstacles solvable in the context of a political settlement. Regarding Israeli-Palestinian sources in the West Bank, Israel maintains the main productive zones of the Mountain Aquifer are located within its Western Basin that largely underlies Israel.⁹³ The Israeli position also argues that Palestinians underutilize the Eastern basin as partial justification for why Israel does and should use more water. Prior use claims to the Jordan River Basin before occupation of the West Bank may aid the Israeli case in determining its share of extraction, but divisions based on either pre- or post-1967 usage do not account for factors of population growth, changing climactic conditions, and Palestinian riparian rights.

The prime evaluation of fairness in water division should be determined by the tenets of customary international water law with assurances for equitable and reasonable allocations among riparians and avoidance of significant harm to resources. To reach a truly equitable arrangement, Israel would need to reduce its abstraction from the Mountain Aquifer

⁹³ O. Tal-Spiro. (2011, February 6). *Israeli - Palestinian Cooperation on Water Issues*. Paper Presented to the Internal Affairs and Environment Committee of the Knesset, Jerusalem, Israel, 17.

considerably, a phenomenon that has historically never occurred once a riparian state establishes prior use.⁹⁴

Brooks and Trottier argue Israel is better positioned to absorb any losses from altering water divisions in the PA's favor and must consider that this utilization occurred under occupation.⁹⁵ The authors also noted, "Recent agreements about sharing water are tending toward a needs-base rather than a prior-use basis, and they seem to be longer lasting than earlier ones."⁹⁶ To consider adjustments to its withdrawals from the aquifer Israel would first need to understand the benefits of pumping less water, as the aquifer could soon become a fossil groundwater source and contribute to future Israeli shortages. Absolute gains from reducing its drilling activities in the Mountain Aquifer must be made clear to Israel for it to consider benefits beyond its relative gains from using and supplying its population with higher quantities of water than the weaker PA.

In opposition to the Israeli argument, the Palestinian position asserts that Israel's prior use was achieved under occupation, and thus deserves no legal recognition.⁹⁷ As the aquifer's basins are mainly recharged within the West Bank,⁹⁸ the PA contends that Israel should concede some of its claims to those sources. International rules on transboundary water as outlined in the UN Convention and Helsinki documents do not accept this Palestinian position of complete Mountain Aquifer utilization. Riparian norms require that the parties negotiate a reasonable division of supplies.⁹⁹

Although the PLO agreed to the terms of Oslo regarding transboundary resources for overall political expediency water was not a chief Palestinian priority in the context of a broad

⁹⁴ Kirshen & Lautze, 201.

⁹⁵ Brooks & Trottier, 91.

⁹⁶ Ibid, 45.

⁹⁷ Kirshen & Lautze, 201.

⁹⁸ Tal-Spiro, 4.

⁹⁹ Brooks & Trottier, 80.

peace settlement and its official negotiating position has changed in the interim period. From the Negotiations File of the PWA that articulated the official Palestinian perspective in 2003 the PA altered its previous negotiating position and demanded water allocations similar in quantity to those discussed in earlier peace talks but based on riparian rights rather than acceptance of supplies that adequately satisfy population needs. Current Minister and head of the PWA Shaddad Attili insisted that with the signing of Oslo II Israel accepted the premise of equitable and reasonable utilization.¹⁰⁰ The PA also claimed in 2003 that then current and Israeli-proposed levels of divisions would not hold under international water law.¹⁰¹

This evolution in position is a break from the 2000 Camp David peace talks that dealt more directly with technical issues than Oslo. At the time of these discussions to reach agreement on all final status issues of the conflict Israel offered increases in quantities of groundwater to be transferred to the PA but did not affirm the Palestinian right to withdraw an equitable share from the Mountain Aquifer.¹⁰² Israel agreed to allow Palestinian abstraction and desalination activity under the framework of Camp David. Quantities offered by Israeli representatives at these negotiations would have permitted the PA to withdraw only 19% of resources from the aquifer, a proportion that did not reflect equitable divisions among the population.

This proposal demonstrated willingness to compromise by providing fixed quantities rather than enabling a flexible system for sharing based on needs in flux (impacted by factors such as population growth, varying precipitation, and climate change). It was more practical and

¹⁰⁰ S. Attili. (2004). The Negotiating Support Unit. *Israel and Palestine: Legal and Policy Aspects of the Current and Future Joint Management of the Shared Water Resources*. Ramallah, Palestinian Authority, 1.

¹⁰¹ Kirshen & Lautze, 193.

¹⁰² Kirshen et al., 201.

beneficial for the Palestinians than the status quo¹⁰³ but only applicable if agreement was reached on all issues of the political conflict. The current PA position rejects the tenets of Camp David on water because though they would provide increased quantities to substitute for endemic shortages, they would not recognize the principle of full Palestinian riparian rights to the Jordan River and Mountain Aquifer. Since the failure of those peace talks, water conditions have worsened and tensions and instability have caused many Palestinians to lose hope of achieving a fair reformed system.¹⁰⁴

The PA also refuses to accept the premise of water transfers from desalination, which it contends would maintain Palestinian dependence on Israel and the international community without recognition of Palestinian riparian rights. Minister Attali also argued, “Under international law, Israel as the occupying power must pay compensation for the past and ongoing illegal use of Palestinian water.”¹⁰⁵ As settlements are considered part of Israeli occupation, the PA believes Israel’s legitimate use of transboundary water should not include supplies to settlers in the West Bank. Israel is apprehensive to relinquish its upstream advantage, as it doubts the PWA can properly ensure quantity and quality of West Bank supplies and wants to maintain disproportionate control of the main sources. If Israel were to reduce its usage of the Mountain Aquifer, the current government position would only permit this within a final peace resolution.

While these concerns are surmountable, they notably do not reference problems with the Coastal Aquifer. Israel and Hamas do not recognize each other and presently will not communicate and cooperate in any way to solve socio-environmental challenges related to water in Gaza. In 2001, prior to Israeli disengagement and Hamas rule, JWC Representatives Kinarty and El-Sherif advocated:

¹⁰³ Rabbo & Tal, 2.

¹⁰⁴ Mirumachi et al., 11.

¹⁰⁵ Attali, 2.

The Israeli and Palestinian sides view the water and waste water sphere as a most important matter and strongly oppose any damage to water and wastewater infrastructure [in the West Bank and Gaza Strip] ... Any damage to such systems will harm both Palestinians and Israelis.¹⁰⁶

There is precedence for Israeli-Palestinian accord on water. However, the political context in the aftermath of the Second Intifada, unilateral Israeli disengagement and transformed occupation, and rule of Hamas has made cooperation in Gaza impossible. Impactful agreement on water requires a more unified and flexible approach in the West Bank and allowances for humanitarian efforts in Gaza such as permitting and facilitating increased deliveries of safe water to avoid irreparable disaster,¹⁰⁷ but returning to a state of lessened politicization is among the most difficult impediments to resolution.

Israel recognizes that its current arrangement in the West Bank is unworkable in the long-term – although increased visibility of the situation in Gaza will also damage Israeli legitimacy – despite the advantage it holds through its control of all upstream sources. The Research and Information Center of the Knesset (Israeli parliament) specifically acknowledged criticisms that the JWC’s “operation is based on a model of distribution without any real joint management.”¹⁰⁸ This same document stated that the regulation of water and sewage usage is premised on an asymmetrical Israeli-Palestinian relationship and that the body lacks any dispute resolution mechanisms, while claiming that the PWA has actively refused or failed to execute its water responsibilities.¹⁰⁹ It outlined a history of cooperative bilateral relations in general between Israel and the PA and described a committee that has been productive and whose flaws are addressable.

¹⁰⁶ International Water Law Project.

¹⁰⁷ Rabbo & Tal, 2.

¹⁰⁸ Tal-Spiro, 9.

¹⁰⁹ Ibid.

However, the Research and Information Center echoed a mutual goal for renewed cooperation on practicably addressable and crucial problems, such as wastewater pollution.¹¹⁰

Stalemate on mutual water issues is partially a result of Israeli concerns over relinquishing its de facto upstream advantage, but by customary international water law Israel should allow the PA to assume its riparian rights. The Helsinki Rules stipulate, “A basin state may not be denied the present reasonable use of the waters of an international drainage basin to reserve for a co-basin state a future use of such waters.”¹¹¹ Israel wants to avoid setting precedents for recognition of Palestinian riparian rights that invalidate its current use of West Bank sources,¹¹² but this is inconsistent with international law and contributes considerably to ongoing Palestinian shortages.

Despite international rules on water sharing, to unite divergent opinions and reach a successful agreement Palestinians will need to concede some demands. Israel’s advantage better positions it at any negotiation and prevents its compliance to established norms of riparian rights.¹¹³ No solution exists that will perfectly align with both parties’ positions. Cooperation can only occur when Israel and the PA attune behavior and policy to each other’s actions with respect for the principles of international water law. Reaching such a state requires curbing destructive unilateral action with an understanding that specific implementable mechanisms for joint management will be mutually beneficial.¹¹⁴

These qualms over water management are valid and could be addressed seriously in a new bilateral agreement. Compared with the core issues of the political conflict, Israelis and Palestinians agree more on many aspects of the water issue and believe the status quo is not

¹¹⁰ Ibid, 11.

¹¹¹ *The Helsinki Rules on the Uses of the Waters of International Rivers*, Article VII.

¹¹² Aviram & Shmueli, 257.

¹¹³ Ibid, 205.

¹¹⁴ Fischhendler & Katz, 203.

optimal. Profound progress on the water dispute is possible in a way that fundamentally attends to central but reconcilable differences. The current debate partially hinges on perceptions of water rights, as environmental experts Alfred Abed Rabbo and Alon Tal insisted:

While many Israelis have argued that progress can be made through a changed focus in the discourse from “rights” to “needs,” Palestinians are uncomfortable with this approach and believe that recognition of their legitimate rights under international law should be the basis for a formal understanding and agreement.¹¹⁵

The shift in Palestinian position between Oslo II and its 2010 refusal to convene the JWC reflects increasing politicization of water and exposure of the unjust joint management regime. A final resolution on the water issue must reconcile Palestinian demands for recognition of its riparian rights with Israeli concerns for preserving the integrity of the Mountain Aquifer. Resolving this dilemma of rights over needs is the key to addressing the entire failed system of joint management in the long-term, but incremental steps may be necessary to avoid environmental disaster in the interim.

Water induces interdependency, whereas politics problematizes the situation. Israel has become reliant on upstream control over Palestinian portions of shared sources and an unprecedented ability to divert from the Jordan River Basin. Conversely, the PA seeks water independence within the asymmetrical power relationship in the West Bank and as a severely disadvantaged downstream user in Gaza. In this context, Minister Attili argued geography should be the basis of cooperation:

The fact that each of the Parties has an upstream position for some of the shared water resources and a downstream position with respect to others also lends weight to the need

¹¹⁵ Rabbo & Tal, 3.

to protect the quality and integrity of each of the shared watercourses (and to the argument that cooperation between the Parties must occur).¹¹⁶

Israeli and Palestinian concerns over control are indicative of larger partisan issues inextricable from the Oslo framework. Water inherently is not a partisan issue, and the many points on which Israelis and Palestinians agree along with historical evidence of water encouraging cooperation¹¹⁷ suggest a just solution is reachable and implementable. Agreement on a definition of equitable and reasonable divisions complicates this objective as Israel fears balanced administration will establish Palestinian co-ownership of sources not currently shared but claimed by the PA. Israel is concerned with its continued security and seeks to maintain its malleable control of the system,¹¹⁸ but a reformed joint management structure can also be flexible because changes to water can occur without alterations to the rest of the interim arrangement.

Rabbo and Tal summarized areas of agreement on the water dispute. Both governments acknowledge Palestinians receive inadequate amounts of water, and a revision to the system must increase available resources for Palestinians. As over-pumping is similarly commonplace and detrimental to the communities, Israel and the PA agree they must prevent excessive extraction. Although the PA rejects desalination as a substitute for recognition of its riparian rights, it and Israel support the use of this technology in combination with wastewater reuse and reduction of leakages to address shortages. A bilateral commitment on this issue should allow for improvement to infrastructure and protection of supplies. Both sides agree that to mitigate demands of population growth conservation measures such as low-flow toilets and showers

¹¹⁶ Attili, 12.

¹¹⁷ Zeitoun, 106.

¹¹⁸ Feitelson & Fischhendler, 737.

should be used,¹¹⁹ but these more financially accessible devices have not been widely introduced. Most importantly, the parties must prioritize the role water plays in the lives of their people, historically and symbolically.¹²⁰ As water has become more politicized and is inherently connected to the emotional issue of land, its significance to national sovereignty and self-sufficiency for both sides has been sealed. Water should be exploited responsibly to facilitate positive cooperation rather than be misused for political purposes.

Instilling confidence is essential to achieving this type of productive cooperation. Brooks and Trottier cautioned of new bilateral institutions on water: “In practice their effectiveness will depend upon the adoption of a cooperative mindset by both sides, with either side potentially being able to make such joint bodies dysfunctional.”¹²¹ Understanding the parties’ positions is important both for enabling settlement of water and ensuring reforms to the joint management system will be effective and sustainable. International relations theorist E. H. Carr said, “Every political judgment helps to modify the facts on which it is passed. Political thought is itself a form of political action.”¹²² How the sides interpret and comment on the situation is important because it affects the course of water relations and possibilities for renewed communication and eventual system reform. As Israeli and Palestinian perspectives on water have further diverged and the sides remain in conflict it is necessary to identify areas where compromise is possible and evaluate the political climate wherein discussions on water occur or remain absent.

¹¹⁹ Kirshen et al., 200.

¹²⁰ Rabbo & Tal, 1-2.

¹²¹ Brooks & Trottier, 91.

¹²² E. H. Carr. (2001). *The Twenty Years' Crisis: 1919-1939*. New York, NY: Palgrave MacMillan, 6.

The Red Sea-Dead Sea Conduit Case

The Red Sea-Dead Sea Conduit is an example of cooperation presented as meaningful progress that is relatively inconsequential in terms of redressing the flaws of the Oslo water regime but potentially damaging to the socio-environmental situation. Planned outside the realm of the JWC, this water project is relevant to understanding political obstacles to resolving the Israeli-Palestinian water dispute. This case is important for its recentness and its praise received in the political sphere. Dispute over water continues to exist although the conflict is not always visible, even with achievement on projects hailed as cooperative. The core of the conduit plan involves desalination to improve quantity and quality of supplies available through replenishing the highly vulnerable Dead Sea. However, this approach accomplishes little in terms of improving Israeli-Palestinian relations, affirming mutual water rights, or easing the financial burden of purchasing water rather than enabling responsible sustainable extraction from shared sources.

On December 9, 2013 representatives of Israel Jordan, and the PA signed an agreement at the World Bank headquarters in Washington D.C.¹²³ This joint water management treaty to cooperate on the construction of a conduit between the Red Sea (to which many states other than Israel and Jordan are riparians) to the Dead Sea appears a historic victory for regional relations and a win-win-win solution to Israel, Jordanian, and Palestinian water concerns. Despite momentous aspirations for this project, it is not revolutionary and simply refers to the PA as a beneficiary party without confirming Palestinian riparian rights to the Dead Sea and Jordan River Basin.¹²⁴

Map 4 charts the proposed Red Sea-Dead Sea conduit and related desalination and

¹²³ The World Bank. (2013, December 9). *Senior Israeli, Jordanian and Palestinian Representatives Sign Milestone Water Sharing Agreement*.

¹²⁴ Aviram & Shmueli, 257.

hydropower plants.¹²⁵ The change in elevation from transfer of water to the lower Dead Sea will generate electricity to operate desalination plants and pump water to Amman for water-poor Jordan.¹²⁶ In February 2015, Israeli and Jordanian counterparts advanced the project with no reference to the Palestinians. Israeli officials stated that the PA is able to sign onto the plan in a separate agreement to purchase desalinated water, but PA officials were discouraged by disregard for



concerns about violations of Palestinian water rights.¹²⁷ Palestinian participation in the initial December 2013 agreement may have been the result of Jordanian and United States pressure. Former head of the PWA Fadel Kaoush expressed that initial Palestinian participation was motivated by an objective to “uncover and prove the nature and extent of Israeli practices and violations on the Jordan River Basin and the Dead Sea.”¹²⁸

The Red-Dead conduit is set to break ground in 2017 under the authority of a joint

¹²⁵ Josephs, J. Retrieved from Green Light for Red-Dead Sea Pipeline Project. *WaterWorld*.

¹²⁶ Garb, 5.

¹²⁷ K. Simons. (2015, March 6). Red-Dead Pipeline is the Wrong Answer, Politically and Environmentally. +972 *Blog*.

¹²⁸ A. Melhem. (2015, March 16). Canal Project from Red Sea to Dead Sea Makes Waves. *Al-Monitor*.

Israeli-Jordanian directorate.¹²⁹ Environmental groups expressed reservations with changing the ecology of the Dead Sea through infusion of Red Sea water, yet this legitimate concern is not relevant to this assessment's discussion of local water needs. The most responsible process to rehabilitate the Dead Sea is not through potentially harmful unnatural water transfer, but in addressing the extreme diversion and contamination of the Jordan River, which will more directly benefit all riparians of the basin.

Superficially the Red-Dead conduit represents successful regional cooperation and positive action on current and future water shortages because it will produce more water for Israel, Jordan, and the PA. In truth, this and other such plans that capture media and public attention are potentially dangerous because they distract from and fail to address the fundamental complexities of the water dispute. Initial updates on the project emphasized official praise over little coverage of serious concerns, both ecological and in the context of the water management system. Acclaim for all forms of cooperation on water can obscure deterioration of water relations amid celebration for trivial progress.

A late 2014 update by the *Jerusalem Post* interviewed relevant actors on the conduit including Jordanian Water and Sanitation Adviser Hakam Alami and left-wing Israeli minister of Knesset Avishay Braverman who expressed their support. Alami hailed the project as beneficial to all three communities. Braverman, who adheres to the official Israeli position that resolution of water will follow permanent peace with the Palestinians, emphasized the separation of water from ongoing politicization of mutual Israeli-Palestinian problems: "The water issue is only a derivative [of the region's political issues] ... Water is an excuse for war, it's not a reason for

¹²⁹ Times of Israel Staff. (2015, February 26). Israel and Jordan Sign "Historic" Water Deal to Save Dead Sea. *The Times of Israel*.

war.”¹³⁰ The face of cooperation presented to the public on the Red-Dead conduit concealed persistent Palestinian water struggles and antagonism over water because the project’s supporters favored cooperation no matter how slight. Even where water issues are connected directly to political agreement early coverage accentuated this apparent victory of cooperation and failed to investigate relevant socio-environmental risks and lack of progress on the water system.

Responses to the conduit allow the public and policymakers to dismiss the overall issue by declaring regional water challenges resolved with simply the signing of a document of intent for a technocratic solution. Environmental expert Yaakov Garb identified major problems with desalination as an energy-intensive expensive solution that cannot fully meet Israeli or Palestinian water needs, but suggested the Red-Dead conduit may help relieve some political tensions.¹³¹ His prediction proved false as the PA is no longer a direct participant in this project and seven months after the signing of the December 2013 tripartite agreement Israeli-Palestinian violence erupted again. While not directly related to violence in Gaza, the hope that including Palestinian representatives in this agreement would improve general relations and expose the underlying asymmetry in water management in the Jordan River Basin was misguided. As in this case, governments can continue to coordinate even amid instability and conflict,¹³² and thus appearances of cooperation can obscure and perpetuate failure.

A prime example of how public obsession with surface agreement can actually prevent real positive joint management, the Red-Dead conduit demonstrates the importance of perceptions in the Israeli-Palestinian water dispute. On the arrival of the agreement, Israeli Minister of Energy and Water Silvan Shalom celebrated the plan as

¹³⁰ S. Udasin. (2014, October 9). Israelis, Jordanians, Palestinians Advancing on Trilateral Water Swapping Arrangements. *The Jerusalem Post*.

¹³¹ Garb, 8.

¹³² Mirumachi & Zeitoun, 302.

Another layer to peace with the Palestinians. It is a day of celebration with no clichés. We are implementing the trilateral agreement to help residents of the region, to save the Dead Sea, to supply water and electricity, and to bring about strategic, economic, and political cooperation. This is a success story.¹³³

The Red-Dead conduit mega-project will require years to complete but has recently received \$900 million in funding from the World Bank,¹³⁴ while the proposal was contemplated for over a decade before the signing of this so-called historic agreement.

This plan offers neither immediate solutions to the water situation and does nothing to alleviate the dispute. Minister Attili did not criticize the project's merits for Israel and Jordan, but illuminated the ineffectiveness of a Red-Dead conduit on challenges in the Israeli-Palestinian water system: "The agreement was essentially one between Israel and Jordan, with the Palestinian Authority involved because it shares part of the Dead Sea coastline. 'We gave our support to Jordan.'"¹³⁵ Cooperation generally signifies positive action, and although media coverage did allow for criticism of the conduit, especially since the updated February 2015 Israeli-Jordanian agreement, overall its presentation and commentary by Israeli, Jordanian, and Palestinian representatives has been favorable or at least neutral, while negative conditions are overshadowed. Despite increased hope on solving a joint water issue through this regional project, numerous uncertainties such as ecological concerns and ultimate cost (by Israel, Jordan, and donors, and prices of water produced for Palestinian purchases) are involved in this tripartite endeavor. The World Bank feasibility study greenlighted the conduit, but such uncertainties can increase mistrust for all involved state and non-state actors.¹³⁶

¹³³ Y. Benhorin. (2013, December 9). Minister Shalom: Water Agreement Fulfills Herzl's Vision. *YNet News*.

¹³⁴ Simons.

¹³⁵ I. Kershner. (2013, December 9). A Rare Middle East Agreement on Water. *The New York Times*.

¹³⁶ Fischhendler et al., 13.

Local and international media have fulfilled its role as a platform for debate on Israeli-Palestinian water uncertainties in regard to this event, but the Red-Dead conduit has generally been received as a favorable development. The agreement has certainly not produced the milestone cooperation promised by the World Bank and its signers, yet the public believed water was less problematic because of this display of accord. Water is still a growing dilemma in the region, and the Red-Dead conduit only distracted from the continuing stalemate where positive impactful cooperation is necessary. Progress that does not recognize Palestinian water rights, increase quantity and quality of supplies to ensure equitable access, or alter mechanisms for Israeli-Palestinian transboundary resource management achieves nothing substantial and prevents real improvement.

Nongovernment Commentary: Politicians, NGOs, Think Tanks, and Journalists

Whether a direct result of increased attention to water caused by the publicized Red-Dead conduit or novel increased attention within the latest renewed attempt at peace, water received greater scrutiny in early 2014. Water traditionally is not a politically sensitive issue when compared with other aspects of the conflict, yet reporting on uneven access across the Middle East and world from a variety of news sources triggered responses more emotional than previously expressed within the water dilemma. As Oslo II altered little in effect between 1967 and its signing, and only vaguely responded to mutual water challenges, there have been both calls for increased action on Israeli-Palestinian resource management alongside public negation of the issue.

A February 2014 address to the Knesset by European Union President Martin Schulz provides a highly public example of potential volatility from commentary on water. After paying

deference to Israel as a German and speaking on other important points, President Schulz briefly discussed the water issue:

One of the questions these young people [Palestinians] asked me which I found most moving – although I could not check the exact figures – was this: how can it be that an Israeli is allowed to use 70 litres of water per day, but a Palestinian only 17? ... [Shared values of freedom, democracy, and the rule of law] are the basis for the answers we are seeking together to the challenges of the 21st century: climate change and water scarcity, refugee problems, peace and security. They are the basis for our scientific and economic cooperation.¹³⁷

His numbers were inexact but the ratio he presented is very close to the truth. It is common for average Israeli consumption to equal roughly four times the quantity of water delivered to Palestinians in the West Bank, though the amounts vary across years and municipalities, and the speech did not explain why this discrepancy exists. President Schulz unwisely failed to verify the magnitude of water inequality before speaking to an audience of members of Knesset, but his figures mirror the reality of the Israeli-Palestinian water issue.

Protesting President Schulz's remarks – which he considered largely supportive of Israel – several ministers left over shouts that the speech's contents were "German lies."¹³⁸ Many foreign newspapers reported on the incident and contrasted current water relations with the sentiments of President Schulz and Israeli politicians. Notably, the leader of the far-right Jewish Home party Naftali Bennett argued that he expected a German speaker not to criticize Israel within the Knesset, and censured the speech as propaganda.

¹³⁷ M. Schulz. (2014, February 12). Address at the Knesset, Jerusalem, Israel.

¹³⁸ EU Parliament Chief "Insulted" by Israeli Minister Walk-out. (2014, February 13). *Middle East Monitor*.

Similarly, leader of the right-wing Likud party and Israeli Prime Minister Binyamin Netanyahu criticized the speaker's imprecision and propensity to fault Israel, a phenomenon he considers typical in Europe.¹³⁹ Opposition leader Tzipi Livni agreed with her fellow members of Knesset, and responded to President Schulz's remarks: "That is not how the water is allocated. Israel gives the Palestinians more water than what we committed to in the interim agreements"¹⁴⁰

The imprecision of statistics does not void the speaker's message that water inequality is a real problem for Palestinians under Oslo. Even leftist Minister Livni's reply distorts failures in joint water management by disregarding Palestinian riparian rights. Mekorot controls and sells shared Israeli-Palestinian supplies rather than "gives" water to Palestinians. The increased amounts allocated but that often fail to reach the population are only a reflection of attempts to meet the growing population's water needs while distribution to Israelis has grown significantly more. Cooperation highlighted by these politicians is superficial and confounds the actual effects of the Oslo water regime.

In contrast, the PWA praised President Schulz's remarks for opening a dialogue on inequitable and unreasonable water practices in the region:

He highlighted the suffering of the Palestinian citizen in terms of the excessive exploitation by the Israeli side especially in the Israeli settlement which deplete the water resources and diminish the chances of development and improving the Palestinians in all sectors ... The PWA reiterates again that the Joint Water Committee and the Israeli Civil administration's procedures is an obstacle to the development of the water and wastewater sector.¹⁴¹

¹³⁹ Israelis Outraged by EU Official Comments. (2014, February 13). *Al Jazeera*.

¹⁴⁰ A. Hass. (2014, February 16). The Israeli "Watergate" Scandal: The Facts about Palestinian Water. *HaAretz*.

¹⁴¹ Palestinian Water Authority. The PWA Welcomes the Statement of the Head of the European Parliament: The Israeli Protest is Unjustified [Press Release].

The PWA statement cited data from the Israeli Central Bureau of Statistics that average water supplies designated for Palestinian use are 73 l/c/d in the West Bank whereas Israeli settler allocation is on average 242 l/c/d.¹⁴² Although this official Palestinian response overemphasized President Schulz's criticism of the joint water system, it supported his contention that Israeli censure of the speech was unfounded.

When confronted with the realities of the Oslo water regime, ministers of Knesset denied the enduring dilemma and rejected the logic of any outside criticism. Dominant Israeli mentality on the water issue believes that Israel has fulfilled its commitments while the PWA has proven ineffective and too undeveloped to manage shared water securely. Underlying this attitude, Israel's chief priority is its security and relative power in comparison to the PA, and thus the government will make no move to recognize Palestinian riparian rights to the Jordan River and Mountain Aquifer. Progress on the issue does not appear likely if pressed primarily by external advocacy as a change in psychology of relevant actors is first necessary for action on these mutual problems. To make a greater impact on policymakers and the public the water situation must be illustrated delicately with consideration for water's increasing political significance as well as its relation to security and international perception for Israelis and national sovereignty for Palestinians. President Schulz and others have challenged the Israeli narrative on water, and especially following the "success" of the Red-Dead agreement, this act of criticism threatens projected images of Israeli-Palestinian cooperation.

Several weeks after President Schulz's address, amid an unstable United States mediated peace process that would precede a violent summer 2014 war between Israel and Hamas in Gaza, groups continued to emphasize the importance of water to the wider conflict. Tripartite Israeli-Jordanian-Palestinian environmental NGO EcoPeace Middle East (formerly Friends of the Earth

¹⁴² Ibid.

Middle East) and Israeli think tank the Institute for National Security Studies (INSS) jointly advised the United States mediation delegation to include emergency measures concerning the sharing of water resources between Israel and the PA in its framework for peace once the talks' failure appeared inevitable.¹⁴³ The organizations' objective is to ensure sufficient quality and quantity of water supplies reach Israelis and Palestinians throughout every critical shortage by pressuring the architects of peace to prioritize water even without the conclusion of permanent status negotiations.

Speaking on behalf of EcoPeace Middle East, Israel program director Gidon Bromberg commented on the need for greater flexibility on water:

Regional water policies have gained a place in recent years of increasing importance for the State of Israel, in the background of a growing shortage of freshwater in the Middle East ... Israel's water policies today influence not only the price of water in Israel, but also our security and political situation. Surpluses of water that are sold or transferred to our neighbors can help strengthen relationships, serve as a gesture to prevent escalation, and serve as a basis for creating mutual interests among Israel and its neighbors.¹⁴⁴

This position challenges the traditional formula for peace pursued by mediators and the parties. It acknowledges the limitations of this process by suggesting solutions to circumvent failed relations in the conflict overall, but argues such measures could encourage renewed and true cooperation. That the governments will address regional water problems to reach a bilateral settlement of the issue before talks resume is exceedingly unlikely. Against resilient unworkable policy and harmful inaction, these organizations – and others that insist water cannot wait for

¹⁴³ S. Udasin. (2014, April 1). Environmentalists, Security Strategists Caution: Water Can't Wait for a Peace Agreement. *The Jerusalem Post*.

¹⁴⁴ Ibid.

achievement of the Oslo-inspired vision – are vital to spreading awareness of the dilemma and motivating relevant actors.

In the weeks that followed this advocacy and desperation to hold together the failing peace process PA President Mahmoud Abbas stated that Israel must take responsibility for Palestinians in the West Bank if a resolution to the conflict could not be reached.¹⁴⁵ The only fundamental change in execution of water policy since 1967 is that Israel subcontracted its obligations to the local population to the PA in limited disjointed areas. Where Israel was previously responsible for administration of the system for Palestinians in the West Bank, Oslo delegated this task to the PWA in Areas A and B, and the water situation has deteriorated under this framework.

The current situation wherein an incomplete treaty rules Israeli-Palestinian water relations is in many ways inferior to pre-Oslo conditions. An inhibited Palestinian government cannot seriously act on significant environmental problems occurring within or caused beyond its jurisdiction but is responsible for servicing its population. Exasperated with the JWC, the PA government approaches joint water management as an element of political conflict and occupation, and not primarily as a socio-environmental challenge. The interminable interim period has incapacitated the PA. In arguing for Israel to fulfill needs unmet within the institutionalized status quo, President Abbas focused on political problems underlying the entire water dispute.

Adding to the debate on water is B'Tselem, an organization devoted to documenting human rights violations in the West Bank and Gaza to educate the Israeli public and policymakers. The group considers the water situation discriminatory.¹⁴⁶ B'Tselem's figures

¹⁴⁵ A. Sawafta. (2014, April 22). Israel Must Take on Palestinian Governance if Talks Fail: Abbas. *Reuters*.

¹⁴⁶ Water Crisis: Discriminatory Water Supply. (2014, March 10). *B'Tselem*.

verify President Schulz's claim that Israelis are provided with significantly greater quantities of supplies, especially as the interim agreement limited water distributed to Palestinians in the West Bank to fixed quantities but set no maximum flow to Israelis on either side of the pre-1967 borders.

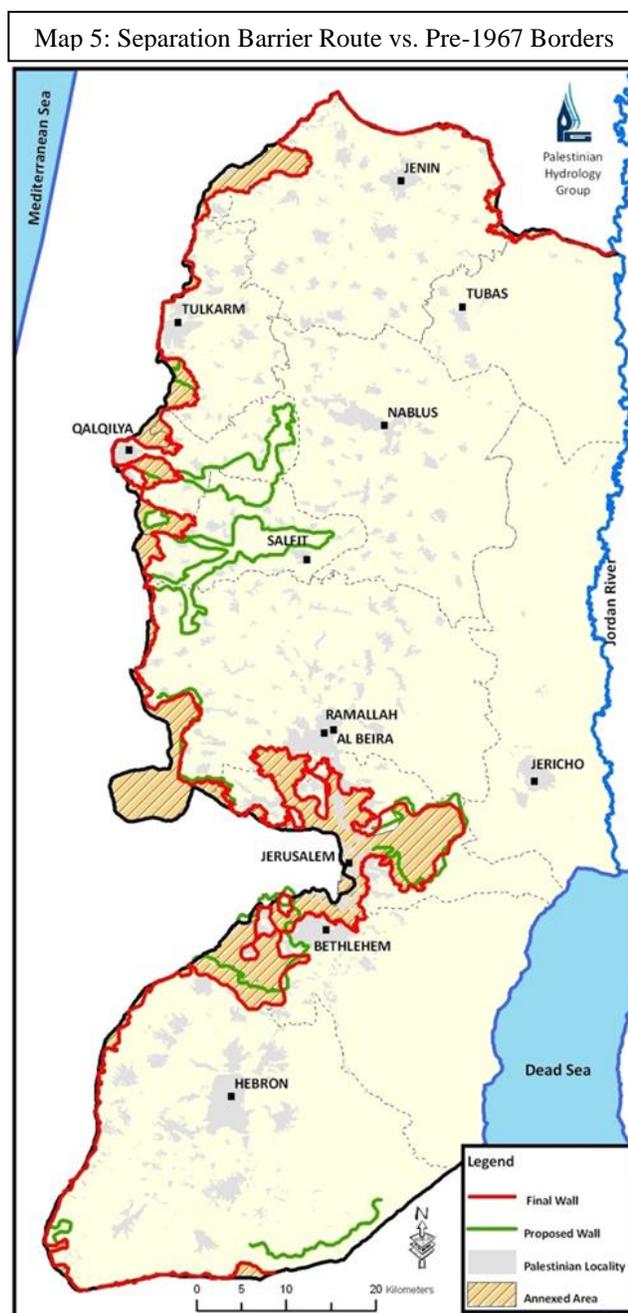
Despite allocating more water to Palestinians than originally stipulated under Oslo II as per Minister Livni's argument, deliveries to Israelis have substantially increased whereas rigid quotas placed on water for Palestinians remain intact. B'Tselem's contention that water is distributed inequitably in the West Bank fits within the organization's broader case against what it considers occupation of Palestinian territory. Yet, its evidence for reforming the Oslo regime is confirmed by EcoPeace Middle East, INSS, and other nongovernmental organizations that represent a wide spectrum of interests across Israel, and include Jordanian and Palestinian voices.

Though an analysis of the status quo reveals Palestinians are desperate for a new system, Israelis also favor renegotiation of institutionalized water relations. When surveyed by EcoPeace Middle East in 2011, a majority of Israelis (nearly half of all respondents) preferred a diplomatic settlement to the water dispute. Responses consistently reflected political ideology,¹⁴⁷ meaning supporters of right-wing parties maintained their distaste for compromise with the Palestinians, while leftist Israelis were more amenable to this hypothetical course of action. EcoPeace Middle East concluded that although water is not as salient as the core issues of the conflict, it is now viewed foremost as a political factor rather than a right.¹⁴⁸ While pursuit of fair accessibility to water should be an objective of the parties, the more critical developing human health and ecological crisis requires moderating political stances to address immediate needs.

¹⁴⁷ Brooks & Trottier, 134-136.

¹⁴⁸ Ibid, 138.

Amid increased attention to water throughout the winter and spring of 2014 a critical example of crisis in the form of extensive water shutoffs circulated among local and international news sources. Thousands of residents of Arab East Jerusalem neighborhood Shuafat (annexed from the West Bank in 1967 but cut off from the rest of East Jerusalem by the Israeli-constructed separation barrier, demarcated in Map 5)¹⁴⁹ received little or almost no water from the national grid for weeks.¹⁵⁰ The PWA has no authority over this area. Causes of the shortage included a seasonal drought, decaying infrastructure in this geographically elevated refugee camp (gravity also complicates pumping to this neighborhood), illegal siphons off the Jerusalem municipality's pipelines, and general mismanagement. The case went to the Israeli Supreme Court which ordered the Jerusalem water company to reach a solution within sixty days. Water returned, but in deliveries of decreased quantities.



¹⁴⁹ Geo-Political Maps.

¹⁵⁰ J. David. (2014, April 17). Palestinian Water Shortages Intensify Due To Drought, Aging Infrastructure, Inaction. *Bloomberg Business*.

Shuafat presents a water situation that captures the interest of foreign media, as the story appeared in the *New York Times*,¹⁵¹ *Guardian*,¹⁵² and *Huffington Post*.¹⁵³ Reform limited to the JWC would not help this case as overall change to the Oslo system and a firm definition of borders is first necessary to solve certain manifestations of the water crisis. However, articles that covered Shuafat also made important reference to the wider issue, and momentum from localized attention proved able to highlight problems with transboundary Israeli-Palestinian water management in general.

As greater exposure to water occurred throughout early 2014 EcoPeace Middle East hosted *New York Times* journalist Thomas Friedman in January to instruct him on the facts of the water dispute. The following month Friedman authored an opinion editorial to expose conditions observed firsthand in the West Bank. His article titled “Whose Garbage Is this Anyway?” grappled with cross-border contamination of the Mountain Aquifer and streams unresolved within the Oslo framework. Friedman, in agreement with the general EcoPeace Middle East position, argued that political resistance to practical cooperation has caused substantial pollution of vital and limited supplies.¹⁵⁴

Ironically, stressed Friedman, water literally disregards international boundaries: in January 2013 powerful runoff in the Alexander Stream destroyed a portion of the separation barrier.¹⁵⁵ Politics in the region often attempts to obstruct positive collaboration, but the interdependent nature of Israeli-Palestinian water necessitates deliberate coordination to address shared environmental concerns that have worsened under superficial cooperation. Friedman

¹⁵¹ I. Kershner. (2014, April 17). Stranded by the Fight Over a Border’s Future. *New York Times*.

¹⁵² P. Beaumont. (2014, April 14). Welcome to Shuafat, East Jerusalem: Where Water Only Comes After Dark. *Guardian*.

¹⁵³ H. El-Ad. (2014, April 1). In Some Palestinian Neighborhoods of East Jerusalem, Not Even 17 Liters of Water Per Day. *Huffington Post*.

¹⁵⁴ T. L. Friedman. (2014, February 8). Whose Garbage Is this Anyway? *New York Times*.

¹⁵⁵ *Ibid*.

concluded his piece by affirming an EcoPeace Middle East suggestion that the United States peace delegation and Israeli and Palestinian negotiators embark on a similar eco-tour of shared resources.

Whether the direct presentation of such evidence to peace process representatives would have enabled the enactment of sufficient emergency measures at the time of EcoPeace Middle East and the INSS' joint call for action is unknown. To achieve productive results on the issue, politicians need to integrate advice from technical experts and commit to targeting mutual water problems ahead of a final resolution. Delay is potentially disastrous, whereas a more flexible approach to the dispute could be demonstrated as necessary and beneficial to both Israelis and Palestinians.

Debate and dialogue on water proliferated from various public outlets in early 2014. Unfortunately, media attention did not linger long on obstacles to effective transboundary water management as the summer Israeli-Palestinian war overshadowed this smaller element of the conflict. This brief focus on water also revealed the heightened politicization of an environmental dilemma traditionally considered less salient than the conflict's core issues. The water dispute has been frequently absent from reporting on the region since the spring of 2014, as it was before. When mentioned in the international media water problems were primarily in connection with strikes in Gaza or in one case relevant to a story on a real estate project unconnected to pipelines because the JWC has not convened to approve the project in the Palestinian city of Rawabi in the West Bank.¹⁵⁶

An interview in Palestinian newspaper *Al-Quds* relayed a relevant update from March 2015 regarding the water system. While the announcements from this conversation did not receive much coverage, it is significant that the Israeli Civil Administration approved an increase

¹⁵⁶ Isaacroff.

of yearly water sales to Gaza from five to ten MCM in addition to circumventing the JWC by approving the water connection to Rawabi.¹⁵⁷ These initiatives should be employed carefully to direct public attention toward other Israeli-Palestinian water issues that remain unresolved.

Although independently these measures are positive, any coverage of the events must be cautious not to represent unilateral actions as a practical sustainable approach to shared water problems.

More thorough system reform that elicits the guidance of water experts and integrates Israeli and Palestinian support remains crucial.

Despite signs of slight advancement, the water dispute is developing while conditions worsen and varying unilateral actions continue. Mutual water challenges should continue to be highlighted as an important component of the Israeli-Palestinian conflict. Water necessitates focus not simply on mega-projects or stories of superficial cooperation, but deep analysis and responsive policymaking to serve both communities. The situation is at a political impasse, and deceptive appearances of progress are politically significant and problematic. Change requires reevaluation of traditional approaches to conflict resolution through emphasis on communication over unilateral action and flexibility based on informed opinions.

Publicization of the Water Dispute

It is necessary to understand public opinion and general psychology on the water issue if the sides are to attempt compromise – whether in full conflict resolution on the scale of final status negotiations or in pursuit of implementing smaller confidence-building and emergency measures on water. Though impossible to meet both Israeli and Palestinian positions entirely and fulfill principles of customary international water law in the interim period, agreement

¹⁵⁷ As cited in T. Lazaroff, S. Udasin, & Y. Lappin. (2015, March 5). Israel Helps Relieve Water Crisis in Gaza Strip by Doubling Supply. *Jerusalem Post*.

comprising terms that are more precise than the language of Oslo that provides for joint management based on practical flexible plans is possible. While the JWC has not met for political reasons since 2010, its remarkable convening throughout the volatile Second Intifada demonstrates socio-environmental concerns that inextricably relate Israelis and Palestinians are a powerful impetus to overcome unstable and even antagonistic relations. Despite increased politicization, obstacles from hostile rhetoric and the uninformed public and policymakers are surmountable. Public influence should be harnessed for action on water rather than further alienate this set of interdependent partners.

Concrete progress on water is dependent on concern for this aspect of the conflict specifically within Israel and the PA. International agendas cannot force agreement on behalf of the parties, as negotiations achieved for the sake of generating appearances of cooperation undermine real possibilities for improvement to the water system. International concern can pressure regional action, but it cannot dictate implementation of agreeable terms. Alternatively, encouragement of simple stopgap measures will only allow severe endemic failure to persist.

Global input matters, but primarily to external perceptions of the behaviors of the sides. Israeli and Palestinian legitimacy can be influenced by awareness of their choices and behavior on water, but that cannot be the prime motivator for addressing the dispute, as water has become increasingly politicized. When the stakes appear high and worth addressing proximately, then benefits from true cooperation will extend to the population. First, the parties must move beyond accusatory rhetoric and refusal to collaborate, so that compromise on issues of transboundary resource management will enhance the governments' images once a solution to the ineffectual system is reached in a manner that is just and satisfies Israeli and Palestinian priorities.

The water issue's politicized and publicized moment in early 2014 is a new point of reference for future discussions. In spite of the fickle nature of the international news cycle water will continue to be relevant within the Israeli-Palestinian conflict, as it fundamentally affects the local population in terms of health, stability, and security. Rather than attention to superficial mega-projects or coverage as an afterthought to damages caused by widespread Israeli-Palestinian enmity and violence, the water dispute requires continued direct exposure to encourage action on the escalating crisis. The situation must be provided an independent platform, as it clearly merits intense consideration that encourages productive and flexible approaches to challenge the status quo. There is no panacea to the water issue, but productive discourse and targeted proposals will be most profitable to Israelis and Palestinians as they attempt to resolve their shared water challenges.

CHAPTER THREE

APPROACHES TO SYSTEM REFORM AND CONFLICT RESOLUTION

Control over water in the Middle East has transformed into an ideological subject because governance of transboundary resources reflects issues of national sovereignty and international relations between states. Water naturally induces interdependency and necessitates cooperation. Thus, resolution of this aspect of the Israeli-Palestinian conflict can secure water rights and improve environmental stability for both parties. Momentum from properly addressing mutual water challenges may help lead to successful settlements of other areas of the political conflict. The core issues include final land borders, security, Israeli settlements in the Palestinian territories, claims to Jerusalem, and right to return for Palestinian refugees' from the 1948 and 1967 wars. These matters are far more complex and emotionally divisive than the water dispute, yet progress on shared resources and building mutual goodwill through legitimate cooperation can help stimulate wider reconciliation and resolution of permanent status issues deferred under Oslo.

The failures of successive attempts to reach a comprehensive peace cause environmental advocates and policy experts to question previously attempted conflict resolution strategies. Given the recent failed negotiations of spring 2014, it is important to consider optimal timing and methods for settlement of the water dispute. Opinions vary widely on whether addressing water ahead of permanent status negotiations, in tandem with talks, or after the establishment of a permanent peace is best. These concerns contribute to highly politicized debate, but water cannot wait for the fulfillment of domestic political agendas, and compromise is essential on this issue

prior to resolution of the political conflict. Negotiations in this context will be difficult, but water will not be nearly as challenging to resolve as the core issues of the Israeli-Palestinian conflict.

Non-state actors contribute to ongoing dialogue of water responsibilities among the communities parallel to and independent of Oslo. Notable examples include EcoPeace Middle East's Good Water Neighbors project that works at the municipal level within and across Israel, Jordan, and the PA, and the Shimon Peres Center for Peace in partnership with Palestinian organizations and professionals on wastewater.¹⁵⁸ Good Water Neighbors leverages interdependency between pairs of several cross-border Israeli, Jordanian, and Palestinian cities and villages to facilitate dialogue on mutual water challenges through educational programs and smaller public development projects, whereas the Peres Center conducts research on wastewater treatment and reuse as one of the only joint Israeli-Palestinian academic studies in existence.

Yet it is evident that the status quo in relations and operations is ineffective and inadequate even as nongovernment organizations promote grassroots level cooperation and attempt to build mutual trust across the region. The water dispute is a political problem that requires a political solution. Settlement of this dispute necessitates implementation of a new water agreement. Nongovernment projects can help increase trust and mutual respect, but they are not long-term or even partial solutions to the inherently political problems underlying the water crisis.

Envisioning an Ideal Alternative to Oslo

A new agreement between Israel and the PA is vital. Environmental policy experts Itay Fischhendler and David Katz posited that a centralized interstate institution could better manage disputes by reducing uncertainties related to water sharing among all riparians to the Jordan

¹⁵⁸ Tal-Spiro, 13.

River Basin.¹⁵⁹ However, in the absence of a comprehensive peace treaty between Israel and Arab states – which would only come about after the Israeli-Palestinian peace track is finalized – it is unlikely either Lebanon or Syria would agree to cooperate actively and directly with Israel, and vice versa. As precedence for joint management exists bilaterally between Israel and the PA transboundary cooperation over shared water to overcome current and future shortages and pollution is possible and should be pursued.

Adding multiple parties to an interstate operation may also prove problematic and counter-productive. In their study of water treaty design, political scientists Sara McLaughlin Mitchell and Neda M. Zawahri found that difficulties to overcoming collective action problems through direct communication, as is the purpose of river basin organizations, could become more severe with the inclusion of additional members.¹⁶⁰ Moreover, “bilateral agreements on water are much more common and easier to reach than multilateral.”¹⁶¹ The simplest and most achievable course on West Bank water resources is renewed Israeli-Palestinian commitment. Without another consistent transparent method to monitor activities, exchange information, and ensure responsible management of shared sources, excessive depletion and pollution will continue unchecked.

Unlike land, water is mobile and requires treatment as such in any agreement. Unchecked pollution spreads across political boundaries, resources are easily diverted, and when withdrawals exceed recharge rates, as is the case in both the West Bank and Gaza, available supplies decline rapidly. Pursuing a new Israeli-Palestinian arrangement will not address these water problems in the Jordan River Basin without full support of the other riparian states and

¹⁵⁹ Fischhendler & Katz, 200.

¹⁶⁰ S. M. Mitchell & N. M. Zawahri. (2012). *The Effectiveness of Treaty Design in Addressing Water Disputes*. Paper presented at the International Studies Association Conference, San Diego, California, 13.

¹⁶¹ Aviram & Shmueli, 247.

recognition of Palestinian riparian rights to the Jordan River. However, reform of transboundary resource management in the West Bank can allow two of its five riparian entities to implement vital protection measures for the Mountain Aquifer and increase intercommunal trust for future rehabilitation of the Jordan River while reducing their own diversion and pollution. Regarding policy changes to groundwater in the aquifer agreements on divisions should not cap quantities to either community as under the JWC, but rather grant equitable and reasonable access based on percentages, and contain provisions for sustainable management.

Israel, which is more secure party in terms of supplies, should consider reducing its abstraction from shared sources for absolute gain possible from coordinated protection of its waters. The situation wherein Palestinians lack clean running water for extended periods while Israeli settlements receive dependable supplies is unjust and untenable. Both sides have suffered negative consequences of cross-border pollution and drying up of shared water – conditions that will worsen if the system remains unchanged. Officials in Israel and the PA do admit some level of reform to the system or an adjustment to water transfers is necessary to improve living standards and ultimately achieve comprehensive peace, but official positions and public opinion indicate disagreement over how to fulfill populations' needs.

Israel does not want to cede its strong advantage to its co-riparians. Nevertheless, water presents a unique opportunity to ease political tensions with the PA. Water is generally considered a less emotional and important feature of the conflict than the core issues, even as it has become more politicized over recent decades. Therefore, compromise on this dispute can potentially be employed as a confidence-building measure and eventually as a politically expedient negotiating asset on the wider political conflict.

Mirumachi, transboundary resource management expert Jeroen Warner, and Zeitoun's analysis of the effects of soft power on water conflicts demonstrated that "first among equals" carries more relative influence" on the course of positive and negative water interactions.¹⁶² As the stronger party in the current asymmetric power relationship Israel can afford to concede more to the PA on water before a final peace resolution, and thereby improve its international standing and encourage further agreement on issues of the political conflict. Compromise on this dispute can influence overall relations and help forge a path to peace by demonstrating willingness to protect shared water.

Despite increased volatility in the region, especially in hostility and violence between Israel and Hamas in Gaza, Israel and the PA must also acknowledge and expand water cooperation based on precedence for interaction on water projects such as desalination with non-allied states. With support from Oman – with whom Israel does not have official diplomatic relations – the Middle East Desalination Research Center (MEDRC) has brought together representatives from Israel, the West Bank, and Gaza, and hosted the Director General of the Israeli Ministry of Foreign Affairs at talks in Oman alongside members of the Gulf Cooperation Council.¹⁶³ The PWA has requested MEDRC's support and this regional organization facilitated cooperation among these commonly unfriendly political entities to enhance water security and the peace process.¹⁶⁴ Based in Muscat and headed by the Omani government but created initially to address Israeli and Palestinian water issues in the Oslo multilateral track, MEDRC's intent is to improve environmental security in the region and prevent projected shortages in freshwater by sharing desalination knowledge across its initiatives. Israel, which is one of the ten technical

¹⁶² Mirumachi et al., 165.

¹⁶³ S. Neubauer. (2011, February 1). Can Water Cooperation be a Model for Middle East Peacemaking? *The World Post*.

¹⁶⁴ Ibid.

representatives to the Center,¹⁶⁵ has accepted MEDRC's invitation to participate in its research on transboundary water that includes environmental challenges in Gaza.

In international affairs certain events appear impossible until they seem inevitable. For now Israel and Palestinian leadership in Gaza refuse to communicate and cooperate on mutual water problems and thus approaches to reforming the water system must be planned within that context. However, to claim positive collaboration will never occur is pessimistic and shortsighted. Allowing for a more flexible accord on water can help foster conditions in which future more profound and comprehensive action occurs.

Challenging the Timeline

The peace process has not disregarded water entirely, but approaches to a solution through official channels and by other interested parties have often been unimaginative and restrictive. In 2003 the Geneva Initiative plan requested that policy and environmental experts propose a new joint management operation for Israeli-Palestinian water engagement. EcoPeace Middle East was one responder to that international call to overhaul water relations and its revised suggestions thoroughly outlined a new water system. The plan included a bilateral water commission to replace the JWC to approve local projects, connected to a water mediation board, both of which must consider guidance from an office of scientific advisors.¹⁶⁶ However, it did not discuss specific divisions of water supplies, only the creation of new mechanisms to determine quantities that provide for at least the WHO minimum amount of 100 l/c/d to the population. The Geneva Initiative rejected EcoPeace Middle East's proposal, but the Israeli-

¹⁶⁵ <http://www.medrc.org/>.

¹⁶⁶ Brooks & Trottier, 83.

Jordanian-Palestinian environmental group has since updated and revised its suggestions with the support of the EU.

EcoPeace Middle East maintains that its initial proposal was rejected because of its position that water can and should be resolved before the conclusion of permanent status negotiations, which according to the traditional peace process must follow the interim period established under Oslo. This NGO is not alone in suggesting a possibility for water reconciliation ahead of full resolution to the conflict as demonstrated by its unified plea in the spring of 2014 to the United States peace delegation with the INSS. Action on complementary Israeli-Palestinian interests is justified and could benefit political relations rather than undermine the peace process. In its 2012 report that expanded from the 2003 draft proposal, EcoPeace Middle East advocated that a final water agreement must be: 1) economically efficient, 2) socially and politically equitable, 3) ecologically sustainable, and 4) practical and implementable,¹⁶⁷ ensured through a renegotiated joint management system supported by coordination between the Israeli and Palestinian governments and their institutions. These guiding values reflect international norms enshrined in the UN Convention on the Law of the Non-Navigational Uses of International Water and the Helsinki Rules on the Uses of the Waters of International Rivers. Other environmental experts affirm these tenets, but any proposal must primarily be fair and feasible.

A new water agreement must consider the current broader political climate, which may not benefit from a settlement of water if it risks larger issues in the Israeli-Palestinian conflict, especially in connection to final borders. Settlement of key water problems must not restrict future negotiations on other core aspects of the political conflict by setting precedents in terms of territorial divisions and source ownership; it must be a flexible system that prioritizes absolute gains from cooperation over unilateral antagonistic action. Mirumachi and Zeitoun argued, “If

¹⁶⁷ Ibid, 22.

important components of the agreement are not implemented, or favour one actor at the expense of a collective win, the result would likely be rated as some form of ‘poor’ cooperation, or even ‘non-cooperation.’”¹⁶⁸ The authors provided the example of the 1994 Israeli-Jordanian peace treaty, which although immensely improved relations on all fronts, contributed to Jordan’s crippling water situation today as Israel still controls the Upper Jordan River. Agreement on Israeli-Palestinian resources must therefore prudently reflect the projected future needs of both communities. Surface level cooperation motivated chiefly by political impetus rather than the escalating humanitarian crisis will be ineffectual and risk real progress in the long-term, as did Oslo.

An effective settlement of the water issue will ensure compliance to the riparians’ commitments while preserving their goals and interests. Israel as the more water secure party can make available effective deliveries of the minimum 100 l/c/d to Palestinians in the West Bank. International donors can also supply water as humanitarian aid and help ease the financial burden of purchasing water from regulated carriers in Gaza. Even though Hamas has isolated itself from the rest of the world water is a necessity that deserves recognition as a human right. In consideration of population growth beyond the projected five-year interim period and extreme degradation of the Coastal Aquifer Israel should increase the water and power supply it committed to sell to Gaza to fulfill basic human consumption needs and allow the territory to operate a vital wastewater treatment plant recently constructed by the World Bank.¹⁶⁹

Even slight increases in distribution of water and energy are justified, as Israel should compensate for infrastructure it directly targeted during the latest outbreak of violence. Israel doubled the yearly amount of water designated for Gazans 2015 but has the capability to further

¹⁶⁸ Mirumachi & Zeitoun, 303.

¹⁶⁹ G. Bromberg & E. Blumenauer. (2015, April 12). To Avoid a Regional Crisis, Give Gaza more Clean Water. *HaAretz*.

increase sales again to an amount that will be more impactful against socio-economic crisis until a more permanent political solution becomes attainable. Further, this unilateral action as an isolated event is constructive, but ideally these types of emergency measures should be properly communicated and consented to between the two governments and their institutions to ensure positive cooperation. Providing for these water needs is urgent and does not require immediate formal renegotiation of Oslo II or direct communication between Israel and Hamas.

With the present negative state of Israeli-Palestinian relations, constructing a new formal water agreement immediately or pursuing mega-projects advertised as easy solutions may be imprudent as such plans risk accomplishing nothing if they place additional strain on the political situation. Implementing select emergency measures in the spirit of reforming and eventually replacing the JWC can be supplemented by expansion and development of desalination and wastewater reuse technology. However, focus on addressing urgent inadequacies in quality and quantity of deliveries and increased protection of groundwater ahead of any other projects may be more attainable though insufficient to solving the water dispute entirely.

Political representatives and water experts can meet outside the formal peace process under mediation of a third party that can incentivize coordination on the most urgent water challenges. MEDRC or USAID could renew their previous support for bilateral water projects in the region, and demonstration of initial mutual goodwill through productive cooperation could inspire further international sponsorship and expansion of projects in preparation for final status negotiations. Emergency measures agreed to in this setting under informed guidance of scientific experts will protect vulnerable shared resources in areas such as wastewater treatment and infrastructure development, and third parties such as the United Nations could help monitor these activities and others on transboundary water resources. Agreement reached in the interim period

can build a foundation for addressing the full scope of mutual socio-environmental issues in a future framework established beyond the Oslo process through encouragement of limited but pragmatic cooperation on critical water needs.

Cooperative action such as that advocated by EcoPeace Middle East within its Good Water Neighbors project or by the World Bank for the Red Sea-Dead Sea conduit is not always effective and can actually obfuscate and deflect from the real problems in joint management. Mirumachi and Zeitoun also specifically criticized UN and EcoPeace Middle East support for any cooperation, no matter how slight.¹⁷⁰ Limited superficial action on water can conceal ongoing water conflict as smaller projects or even the existence of a basin organization among riparians may lead the public and policymakers to believe positive water interaction is already occurring. Cooperation itself is not the goal as throughout the reign of the JWC it occurred simultaneously with water conflict. Joint water management that substantially provides for the needs of the population and discourages antagonistic actions is not possible in every opportunity for collaboration. The water experts articulated hidden dangers of insufficient or poor forms of cooperation: “De-emphasising the root tensions of a conflict may in fact be a step away from its resolution” as cooperation can present an incomplete image of the water dispute.¹⁷¹ Cooperation requires evaluation under domestic and international political contexts, without which certain proposed solutions may manufacture progress and prevent possibilities for real advancement on water.

Timing is another crucial factor in constructing successful agreements. Conflict resolution expert I. William Zartman stressed that only “when alternative, usually unilateral means of achieving a satisfactory result [to a dispute] are blocked and the parties feel that they

¹⁷⁰ Mirumachi & Zeitoun, 306.

¹⁷¹ Ibid, 307.

are in an uncomfortable and costly predicament”¹⁷² will the moment be “ripe” for pursuing resolution over temporary management. Within the water dispute, Oslo should be presented to the relevant actors as an impediment to socio-environmental prosperity to inspire ripeness for negotiation on shared resources. Evaluators of joint management institutions and drafters of treaties must carefully consider if ongoing and proposed forms of riparian interactions are positive, neutral, or negative. In this context a gradual approach to water reform can begin to address critical deficiencies of the status quo while preparing the sides for future negotiation in an appropriate political moment.

Unfortunately, motivation to act on mutual water challenges from within Israel is generally absent in the current political climate. Israel occupies a relatively comfortable position, excepting cross-border pollution and occasional external pressure on the growing water crisis. As such, Israel does not feel an urgent need to address water directly. Consensus is difficult to achieve when the parties are politically unequal, but as substantial segments of both societies already favor a diplomatic solution and perpetuation of the status quo is dangerous to both Israel and the PA (albeit to different extents presently), easing into resolution of the water issue through gradual implementation of reformed measures is a beneficial undertaking.

The current situation is not conducive to attempting full settlement, but circumstances can change quite rapidly in the region, especially as the PA continues to appeal to global authorities based on international law. Along Zartman’s theory, the situation may need to first negatively intensify to demonstrate consequences of inaction, instigating a ripe moment for real transboundary cooperation. Delay of proper joint action threatens the Mountain Aquifer, which may become a fossil source and increasingly polluted if current conditions continue unchecked.

¹⁷² I. W. Zartman. (2001). The Timing of Peace Initiatives: Hurting Stalemates and Ripe Moments. *The Global Review of Ethnopolitics*, 1.1, 8.

In the context of regional instability and violence policymakers and environmental security experts have the vital task of planning scenarios for implementing reform to water relations as the ecological situation worsens and political factors change. If governments sensibly absorb and apply expert recommendations, the water situation may not need to worsen for a settlement of the issue to become more attainable.

Reduce Uncertainties to Increase Trust

Relaxation of mutual suspicions is necessary to create a superior environment for progress on the water issue. Throughout a dispute the best method to manage hostilities and ensure some positive collaboration is maintenance of communication, which can lead to conditions for ripeness and productive compromise on divergent stances. Provisional but impactful measures can provide for increased and consistent freshwater transfers based on population needs, construction of joint treatment plants in the West Bank, and relevant information exchanges with an arrangement for monitoring compliance to commitments.

Such cooperative activities can work to reduce uncertainties concerning water relations and expose the more critical areas requiring reform in the joint management system without setting precedents unfavorable to either party in a permanent resolution. Fischhendler and Katz categorized possible uncertainties to diminish in the Israeli-Palestinian case by physical, social, and technical factors, like water quality, domestic policies, and construction of wells.¹⁷³ For example, continued research and development on wastewater treatment and reuse will protect shared sources and ensure higher quality of supplies distributed to both communities, while improvements to water infrastructure will decrease leakages and loss of potable supplies in transport.

¹⁷³ Fischhendler & Katz, 201.

If the present political moment does not favor pursuit of a final water agreement, then simple clarifications can help build a political climate more conducive to direct and enduring cooperation. Prior notification on unilateral projects that affect downstream sources, access for primary or third party monitoring of shared water, and mechanisms for continuous consultation among Israeli and Palestinian representatives will substantially reduce uncertainties without risking the overall political peace process. This type of cooperative behavior that does not lead the public and policymakers to believe the water situation has been resolved but still eases extreme conditions requiring direct and immediate attention will benefit the riparians absolutely.

The sides' experts and policymakers cannot fully predict and evaluate all uncertainties, such as effects of population growth and climate change on the region's water supply. However, to the extent that reducing uncertainties through consultation between the sides is both possible without compromising domestic security the governments should share relevant information and data to protect resources. Identifying and understanding factors controlled or analyzed by Israel or the PA is important because sharing relevant information extends trust. These suggested mechanisms are consistent with the Helsinki Rules, which state:

With a view to preventing disputes from arising between basin States as to their legal rights or other interest, it is recommended that each basin State furnish relevant and reasonably available information to the other basin States concerning the waters of a drainage basin within its territory and its use of, and activities with respect to, such waters.¹⁷⁴

Decisions to either wholly reform the system or agree to separate mechanisms to enhance joint management must all refer to this fundamental tenet to work toward true bilateral success via a just arrangement. Facilitating opportunities to exchange information and supplement insufficient

¹⁷⁴ *The Helsinki Rules on the Uses of the Waters of International Rivers*, Article XXIX, 1.

quantities and quality of supplies that reach Palestinians will help Israel improve its international image and future bargaining position through legitimization of its water operations.

Opening up new modes of contact will not remove the origins of the water dispute, but acts of goodwill by the advantaged side in an asymmetric power relationship may lead to permanent solutions in the future. Palestinians can also bolster legitimacy of their water activities when sufficient clean water becomes available because they will no longer need to supplement inadequacies with damaging siphoning off Israeli pipelines. Exercising soft power through including confidence-building measures of information exchanges in this context may also positively affect Israeli-Palestinian interactions beyond water. The JWC has so far failed to adopt such measures in its almost twenty-year reign, and has thereby added to mutual suspicion and pessimism for collaboration to improve relations gradually. While there is no perfect path, as pursuit of any action must be performed delicately and consider public perceptions of the situation alongside population needs, it is evident that even small emergency measures to protect shared resources and reform joint management institutions are preferable to the status quo of hostile and limited water interaction.

Effective water treaty design requires a more direct approach: Mitchell and Zawahri's study suggested that the best indicator for success in a river basin organization is the inclusion of provisions for enforcement and monitoring,¹⁷⁵ which increase the likelihood of compliance to commitments. Essentially, the authors advocated for better communication comprising measures to exchange data and other information, incentives for compliance, and deterrents against breaking treaty terms. Such mechanisms will better ensure treaty resiliency because they provide means for dispute resolution and maintenance of cooperation within river basin organizations.¹⁷⁶

¹⁷⁵ Mitchell & Zawahri, 25.

¹⁷⁶ Ibid, 15.

The JWC lacks institutional recourse for addressing disputes, even as Oslo II enabled communication: “Israel shall assist the Council in the implementation of making available all relevant data.”¹⁷⁷ Despite the inclusion of measures for exchanging information, its language throughout was imprecise and in implementation was disregarded easily within the interim period. Mechanisms for cooperation are not enough; incentives for smooth execution of terms and continued compliance enforced by a third party along with a specific process for dispute resolution need to be present within large-scale treaties and temporary emergency measures.

Vital design features that reduce uncertainties among co-riparians are necessary to achieve positive results and improve agreement resiliency. Provisions that ensure compliance to terms of international agreements in the form of full conflict resolution or on individual piecemeal but meaningful measures can make the difference in avoiding further deterioration of water conditions. International relations expert Raymond Cohen stressed breakthroughs on stalemates often require inclusion of international guarantees that:

Help to alleviate uncertainty and assist decision-makers to calculate on a better-informed basis the gains and perils of a prospective settlement. Moreover, by making the future less unpredictable, the risk factor by which future benefits are discounted is lowered and the subjective expected utility of the agreement raised.¹⁷⁸

The insertion of enforcement guarantees into any water agreement by a third party mediator who can incentivize coordination will help to ensure reciprocal execution of responsibilities and prevent worsening of party relations. Although accord was reached in Oslo II, the document’s language was vague and allowed for too much interpretation on commitments. Ill-defined treaty terms can strain relations because lack of clarity inevitably prevents successful action on mutual

¹⁷⁷ Israeli Ministry of Foreign Affairs, Annex III, Article 40.

¹⁷⁸ R. Cohen. (2001). Breaking the Deadlock: Guarantees in International Mediation. *Cambridge Review of International Affairs*, 14, 41.

goals. Pursuit of imprecise dispute resolution is often worse than the absence of a diplomatic strategy because disappointment from failed negotiations can aggravate poor relations.

Agreement on water does not need to be comprehensive and extremely detailed, but incremental progress on the issue requires insurance that the most critical aspects of the dispute will be addressed.

Immediate and acute water needs of the communities require reductions to uncertainties on transboundary water to target pressing quantity and quality dilemmas most effectively. Still some level of ambiguity in a final water agreement that allows for interpretation may be necessary¹⁷⁹ to make acceptance of negotiated terms possible by approximately bridging Israeli and Palestinian positions. Party representatives must strike a careful balance when dealing with political resolutions, but for the implementation of emergency measures they can pursue language that is more exact to prevent socio-environmental catastrophe. As emphasized in Chapter Two, Israel and the PA will need to concede some demands to reach a new agreement on water for the population's mutual benefit, but substantial changes to the Oslo political system are not necessary to achieve effective cooperation in the interim. With resumption and expansion of coordination on water projects ahead of permanent status negotiations there will be only limited tradeoffs on other core issues of the Israeli-Palestinian conflict that will not alter the political status quo.

The optimal course will introduce select emergency measures in a bilateral agreement that adheres to established international rules and protocols for water interaction to different extents in Israel, the West Bank, and Gaza, and guarantees transparent implementation of those provisions. This reformed method of engagement on the level of full resolution is not pragmatic and feasible now, but ideally will be some day. Thus, pursuit of incremental progress on water is

¹⁷⁹ Fischhendler & Katz, 201.

superior to the continuation of the interim arrangement and still achievable within the Oslo framework. To make possible a future resolution of the water issue measures that increase stability in water interactions without fundamentally altering the Israeli-Palestinian mode of relations are necessary and beneficial to both parties in the interim.

Relevance of Behavior on Water to the Israeli-Palestinian Conflict

Through deconstructing the ruling JWC and introducing new forms of water engagement, Israel and the PA may begin to repair failures in their joint management system and plan for ongoing and future shortages. Currently the water dispute endures amid negligence, inaction, and open hostility. Any substantial agreement must be crafted in acknowledgement of public and official attitudes toward the water situation to be most effective in the short and long-terms, whereas emergency measures must be responsive not to political demands but to the direct fulfillment of human and ecological needs.

Separate from reaching agreements on the core issues of the Israeli-Palestinian conflict, it is possible to increase trust between the sides by altering water interactions in key ways. To improve relations while providing for Palestinian water needs, maintaining Israel's security priorities, and addressing shared concerns on resource contamination, new protocols to govern joint water management should be implemented. A dialogue on rights versus needs is important to Palestinian sovereignty, but as strict adherence to customary international water law threatens Israel's position that discussion should be relegated to final status negotiations. Water negotiations can be cathartic, and even help precipitate a permanent resolution to the Israeli-Palestinian conflict, as "although the most embittered stalemate often begins with a fierce rhetorical settling of historical accounts, it usually ends with a tremendous sense of mutual relief

and accomplishment on the part of negotiators.”¹⁸⁰ Small but impactful action that helps avert water crisis can therefore concomitantly demonstrate goodwill between the parties and possibilities for future more comprehensive negotiations.

The only other track to progress on water would require worsening of already untenable conditions to instigate a ripe moment for more comprehensive negotiation on the issue, which will make accord appear even more vital amid an interminable wait for replacement of the general Oslo system. Gradual reform on water risks less and serves direct human and environmental needs while enhancing Israel’s public image: a win-win. Concessions at this stage need not be painful and can establish normalcy of water relations in preparation for a more profound reevaluation of the system as part of an end to the interim period.

Incorporating recommendations from relevant environmental organizations and water policy experts to reduce relevant uncertainties without forcing direct negotiations at an inopportune time is the best course of action under the current unfavorable political climate. As transboundary resources expert Aaron Wolf argued, “While water can act as an irritant, making good relations bad, and bad relations worse, it rarely induces acute violence and often acts as a catalyst to cooperation, even between bitter enemies.”¹⁸¹ Water cooperation in the Israeli-Palestinian conflict has obscured adverse consequences, but renewed positive interactions are more likely to inspire broader cooperation than incite hostility. Any changes within the context of the interim period cannot entail the immediate dismantling of the failed water regime, but carefully selected emergency measures can precipitate advancement and trust to the conflict overall.

¹⁸⁰ Cohen, 41.

¹⁸¹ Zeitoun, 106.

Enforcement of each side's water responsibilities along with exchange of important information about shared resources will partially and immediately address unsustainable practices such as over-extraction and contamination of aquifers. While this plan will not completely resolve Israeli and Palestinian water struggles, it provides a positive and logical method of engagement ahead of permanent peace. Action on water guaranteed through agreements parallel, not opposed to the general peace process will help avoid socio-environmental crisis and raise confidence. Reformed behavior for mutual Israeli and Palestinian benefit will sustain the populations and model to the world the profit of action founded on natural interdependency.

CONCLUSION

POLITICAL AND SOCIO-ENVIRONMENTAL IMPLICATIONS

Water is a viable conduit for peace between Israel and the PA because it necessitates stable and continuous interaction to fulfill mutual goals for transboundary resource management. Though the water issue has been politicized in recent years, it is less salient than other aspects of the Israeli-Palestinian conflict. As precedence for continued cooperation existed between 1996 and 2010 even as the joint management structure was extremely flawed, water problems can be addressed within the context of the interim period and before the conclusion of final status negotiations.

The current political stalemate and the Oslo framework impede action on an important aspect of the Israeli-Palestinian conflict that may soon devolve into a widespread humanitarian disaster throughout Palestinian territory, as well as reduce quantity and quality of supplies available to Israel in the future. Water deserves increased attention by representatives of the two parties and international community, as well as new mechanisms for shared management. It requires expedient action irrespective of political will. A system that completely satisfies the tenets of customary international water law and reasonable compromises of Israeli and Palestinian positions on water is unachievable today given the highly volatile political climate in the region. However, alternations to the sides' behaviors and increased coordination through acts that reduce uncertainties on shared sources are superior to the stagnant interim agreement.

Institutionalization of Israeli upstream advantage through the JWC has been permitted to continue for too long. The type of coordination it engenders antagonizes the sides while preventing real progress on shared water concerns such as protection of groundwater. Consensus

within this structure is impossible today, as political issues such as Israeli settlement activity and inter-party violence have eclipsed water management as a priority.

No simple solutions exist on the water issue. Superficial cooperation through select projects and reports that Palestinians are receiving increased supplies while Israel unilaterally treats and diverts water obscures the negative reality. Within the inaction of the interim period environmental experts and other concerned non-state actors can continue to publicize deficits of the current water regime while advocating for emergency actions.

The governments must prioritize water now, as conditions will deteriorate further while water remains absolutely tied to the successes or failures of peace discussions. They must demonstrate willingness to replace or at least supplement or modify an expired system with confidence-building measures that target the immediate critical aspects of the water dispute and ensure utilization that is more equitable and reasonable, and the avoidance of significant harm to shared sources. Actions that do not threaten the political conflict but can meaningfully advance water conditions include select data and information sharing, prior notification on unilateral projects within the parties' riparian rights, and demonstration of goodwill by increasing water deliveries to Palestinians in the West Bank and Gaza. The presence of third party guarantees in an agreement to these reforms can ensure compliance to party commitments.

As a supplementary tool to increase availability of adequate supplies, the parties can also cooperate on desalination and wastewater reuse technology in an environmentally responsible manner that does not favor idealistic technocratic solutions over preservation of vital groundwater resources. Third party mediators such as MEDRC and USAID have already indicated support for these pursuits, and concrete demonstration of mutual goodwill could inspire further international sponsorship. More than likely use of these technologies will be needed to

supplement shortages in combination with a reduction of leakages from aging infrastructure and illegal siphoning, but the sides' immediate focus must be improving quantity and quality of water transferred to the Palestinians and resumption of joint management on shared wastewater challenges. Many of these problems also apply to the situation in Gaza, which is more severe than in the West Bank. However, because water in Gaza is developing into a more visible humanitarian crisis that will further damage Israel's international image and legitimacy, allowing increased entry of freshwater and construction supplies to repair infrastructure is a positive first step possible under moderate provisional apolitical changes to the water regime.

These examples of reformed behavior can begin to address joint dilemmas and help smooth Israeli-Palestinian relations without setting precedents that threaten Israeli or Palestinian future utilization of international waters. Further delay will only harm both sides, through delegitimizing unilateral unconscionable behavior on water and contaminating vital shared sources beyond repair. The arid climate of the Middle East already accelerates water scarcity; allowing politics to exacerbate the destruction of a resource naturally limited, vulnerable, and necessary to life is irresponsible, particularly as catastrophe is avoidable.

No political conflict should minimize the importance of water to the socio-environmental prosperity of nations and states, and as a basic human right. Addressing this case amid the Israeli-Palestinian conflict will model progress on an issue that threatens more of the world each year. The promise of even gradual action can be consequential globally because it demonstrates advancement within an extreme example of resource pollution, shortage, and dispute. In the spirit of genuine cooperation and internationalism serious confrontation of the water issue outside the restrictions of the Oslo system is just, viable, and essential.

GLOSSARY

Aquifer – a confined saturated porous bedrock; for example, groundwater contained in the Mountain Aquifer is naturally very clean but recharges slowly as it is located deep beneath the surface, whereas water from shallow aquifers is easier to extract but also at higher risk for pollution

Areas A, B, C – disjointed areas in the West Bank subject to varying degrees of Israeli and Palestinian control created in the Oslo period

Coastal Aquifer – groundwater source to which Israel and the Gaza Strip are riparians; Israel is the upstream user

Desalination – process that produces freshwater for human consumption by removing minerals from saline water

Final/permanent status negotiations – peace talks on Israeli-Palestinian issues deferred under the Declaration of Principles (1993), not yet concluded

Hamas – democratically elected representative of Palestinians in the Gaza Strip following Israel's unilateral disengagement; considered a terror organization by Israel and other states

Israeli Civil Administration – executes governing operations over portions of the West Bank and local Palestinian population separate from and in coordination with the PA government

Jordan River Basin – a region consisting of tributary and cross-border streams, the Sea of Galilee and the Jordan River, to which Israel, Jordan, Lebanon, the PA, and Syria are riparians

JWC – Joint Water Committee with Israeli and Palestinian representatives in the West Bank, established in 1996 as the official temporary water management body under Oslo

L/c/d – liters per capita per day

MCM – million cubic meters

Mekorot – Israel's national water carrier

Mountain Aquifer – groundwater source to which Israel and the West Bank are riparians, subdivided into the Western, Northern/Northeastern, and Eastern basins; Israel is the downstream user, but has de facto upstream control since capturing the West Bank in 1967

Oslo Accords – a set of peace agreements signed in 1993 (Oslo I/Declaration of Principles) and 1995 (Oslo II) between Israel and the PLO wherein the parties formally recognized each other and transferred partial control over select areas of territories captured by Israel in 1967 to the PA

PA – Palestinian Authority, established by the Oslo peace process to govern in areas of recognized Palestinian control

PLO – Palestine Liberation Organization, negotiating representative of the Palestinian side in the Oslo peace process

Pre-1967 borders/1949 Armistice Line/Green Line – demarcate Israel's internationally recognized borders as territory controlled and governed by Israel after the state's founding, before its capture of territories on June 4, 1967 in the Arab-Israeli War

PWA – Palestinian Water Authority, responsible for complete or partial water management in Areas A and B of the West Bank

Riparian rights – rights states possess of equal legal claims to surface and ground water by territorial bordering or inclusion of a source

Settlements – communities built exclusively for Jewish Israeli settlers in territories captured in 1967

REFERENCES

- 1967 Middle East War. (2007, June 4). Retrieved from *BBC News*.
- Attili, S. (2004). The Negotiating Support Unit. *Israel and Palestine: Legal and Policy Aspects of the Current and Future Joint Management of the Shared Water Resources*. Ramallah, Palestinian Authority.
- Aviram, R. & Shmueli, D. F. (2013). The International Hydro-Political Politics of Israel. *Global Issues in Water Policy*, 4, 243-65.
- Beaumont, P. (2014, April 14). Welcome to Shuafat, East Jerusalem: Where Water Only Comes After Dark. *Guardian*.
- Benhorin, Y. (2013, December 9). Minister Shalom: Water Agreement Fulfills Herzl's Vision. *YNet News*.
- Bromberg, G. & Blumenauer, E. (2015, April 12). To Avoid a Regional Crisis, Give Gaza more Clean Water. *HaAretz*.
- Brooks, D. B. & Trottier, J. (2012). *An Agreement to Share Water between Israelis and Palestinians: The FoEME Proposal*. EcoPeace/Friends of the Earth Middle East.
- Baumer, U. (2013, July 7). Construction of Nablus Waste Water Treatment Plant Completed. *Coordination of Government Activities in the Territories*.
- Carr, E. H. (2001). *The Twenty Years' Crisis: 1919-1939*. New York, NY: Palgrave MacMillan.
- Cohen, R. (2001). Breaking the Deadlock: Guarantees in International Mediation. *Cambridge Review of International Affairs*, 14, 39-52.
- David, J. (2014, April 17). Palestinian Water Shortages Intensify Due To Drought, Aging Infrastructure, Inaction. *Bloomberg Business*.

- El-Ad, H. (2014, April 1). In Some Palestinian Neighborhoods of East Jerusalem, Not Even 17 Liters of Water Per Day. *Huffington Post*.
- EU Parliament Chief “Insulted” by Israeli Minister Walk-out. (2014, February 13). *Middle East Monitor*.
- Feitelson, E. & Fischhendler, I. (2009). Spaces of Water Governance: The Case of Israel and Its Neighbors. *Annals of the Association of American Geographers*, 99.4, 728-45.
- Fischhendler, I., Cohen-Blankshtain, G., Shuali, Y., & Boykoff, M. (2013). Communicating Mega-Projects in the Face of Uncertainties: Israeli Mass Media Treatment of the Dead Sea Water Canal. *Public Understanding of Science*, 20, 1-17.
- Fischhendler, I. & Katz, D. (2013). The Impact of Uncertainties on Cooperation over Transboundary Water: The Case of Israeli-Palestinian Negotiations. *Science Direct*, 50, 200-10.
- Friedman, T. L. (2014, February 8). Whose Garbage Is this Anyway? *New York Times*.
- Garb, Y. (2008, April). *Desalination in Israel: Status, Prospects, and Contexts*. Address at the Water Wisdom Conference, Amman, Jordan.
- Geo-Political Maps. (2010). Retrieved from Palestinian Hydrology Group for Water and Environmental Resources Development.
- Hass, Amira. (2014, February 16). The Israeli “Watergate” Scandal: The Facts about Palestinian Water. *HaAretz*.
- International Law Association. (1966, August). *The Helsinki Rules on the Uses of the Waters of International Rivers*. Report of the Committee on the Uses of the Waters of International Rivers, 1967. London, UK.

- International Law Association. (2004). *The Berlin Rules on Water Resources*. Fourth Report of the Berlin Conference on Water Resources Law. Berlin, Germany.
- International Water Law Project. (2001, January 31). *Israel-Palestinian Joint Water Committee: Joint Declaration for Keeping the Water Infrastructure out of the Cycle of Violence*. Erez Crossing, Gaza Strip: Kinarty, N. & El-Sherif, N.
- Isaacroff, A. (2015, February 20). Waterless, the First Planned Palestinian City Sits Empty. *Times of Israel*.
- Israeli Ministry of Foreign Affairs. (1995). *The Israeli-Palestinian Interim Agreement*. Washington, D.C.
- Israelis Outraged by EU Official Comments. (2014, February 13). *Al Jazeera*.
- Josephs, J. Retrieved from Green Light for Red-Dead Sea Pipeline Project. *WaterWorld*.
- Kershner, I. (2013, December 9). A Rare Middle East Agreement on Water. *The New York Times*.
- Kershner, I. (2014, April 17). Stranded by the Fight Over a Border's Future. *New York Times*.
- Kirshen, P., Lautze, J., Reeves, M., & Vega, R. (2005). Water Allocation, Climate Change, and Sustainable Peace: The Israeli Proposal. *Water International*, 30.2, 197-209.
- Kirshen, P. & Lautze, J. (2005). Water Allocation, Climate Change, and Sustainable Water Use in Israel/Palestine: The Palestinian Position. *Water International*, 34.2, 189-203.
- Lazaroff, T., Udasin, S., & Lappin, Y. (2015, March 5). Israel Helps Relieve Water Crisis in Gaza Strip by Doubling Supply. *Jerusalem Post*.
- Melhem, A. (2015, March 16). Canal Project from Red Sea to Dead Sea Makes Waves. *Al-Monitor*.

- Messerschmid, C. (2011). *Water in Gaza: Problems and Prospects* (Working Paper Series - Conferences and Public Events Module). Forced Migration and Refugee Unit, Birzeit University, Birzeit, Palestinian Authority.
- Mitchell, S. M. & Zawahri, N. M. (2012). *The Effectiveness of Treaty Design in Addressing Water Disputes*. Paper presented at the International Studies Association Conference, San Diego, California.
- Mirumachi, N. & Zeitoun, M. (2008). Transboundary Water Interaction I: Reconsidering Conflict and Cooperation. *International Environmental Agreements: Politics, Law, and Economics*, 8.4, 297-316.
- Mirumachi, N., Warner, J., & Zeitoun, M. (2010). Transboundary Water Interaction II: The Influence of “Soft Power.” *International Environmental Agreements: Politics, Law, and Economics*, 11.2, 159-78.
- Neubauer, S. (2011, February 1). Can Water Cooperation be a Model for Middle East Peacemaking? *The World Post*.
- Palestinian Water Authority. The PWA Welcomes the Statement of the Head of the European Parliament: The Israeli Protest is Unjustified [Press Release].
- Rabbo, A. A. & Tal, A. (2010). Introduction. In, *Water Wisdom: Preparing the Groundwork for Cooperative and Sustainable Water Management in the Middle East* (pp. 1-10). New Brunswick: Rutgers University Press.
- Sawafta, A. (2014, April 22). Israel Must Take on Palestinian Governance if Talks Fail: Abbas. *Reuters*.
- Schulz, M. (2014, February 12). Address at the Knesset, Jerusalem, Israel.

- Selby, J. (2013). Cooperation, Domination, and Colonisation: The Israeli-Palestinian Joint Water Committee. *Water Alternatives*, 6.1, 1-24.
- Simons, K. (2015, March 6). Red-Dead Pipeline is the Wrong Answer, Politically and Environmentally. +972 *Blog*.
- Tal-Spiro, O. (2011, February 6). *Israeli - Palestinian Cooperation on Water Issues*. Paper Presented to the Internal Affairs and Environment Committee of the Knesset, Jerusalem, Israel.
- The World Bank. (2013, December 9). *Senior Israeli, Jordanian and Palestinian Representatives Sign Milestone Water Sharing Agreement*.
- The World Bank. (2009, April). *West Bank and Gaza - Assessment of Restrictions on Palestinian Water Sector Development, (Report no. 47657-GZ)*.
- Udasin, S. (2014, April 1). Environmentalists, Security Strategists Caution: Water Can't Wait for a Peace Agreement. *The Jerusalem Post*.
- Udasin, S. (2014, October 9). Israelis, Jordanians, Palestinians Advancing on Trilateral Water Swapping Arrangements. *The Jerusalem Post*.
- United Nations General Assembly. (1997). *Convention on the Law of the Non-navigational Uses of International Watercourses*. New York, NY.
- Water Crisis: Discriminatory Water Supply. (2014, March 10). *B'Tselem*.
- Weinthal, E., Vengosh, A., Marei, A., Gutierrez, A., & Kloppmann, W. (2005). The Water Crisis in the Gaza Strip: Prospects for Resolution." *Ground Water*, 43.5, 653-60.
- Zartman, I. W. (2001). The Timing of Peace Initiatives: Hurting Stalemates and Ripe Moments. *The Global Review of Ethnopolitics*, 1.1, 8-18.

Zeitoun, M. (2007). The Conflict vs. Cooperation Paradox: Fighting Over or Sharing of Palestinian-Israeli Groundwater? *Water International*, 32.1, 105-20.